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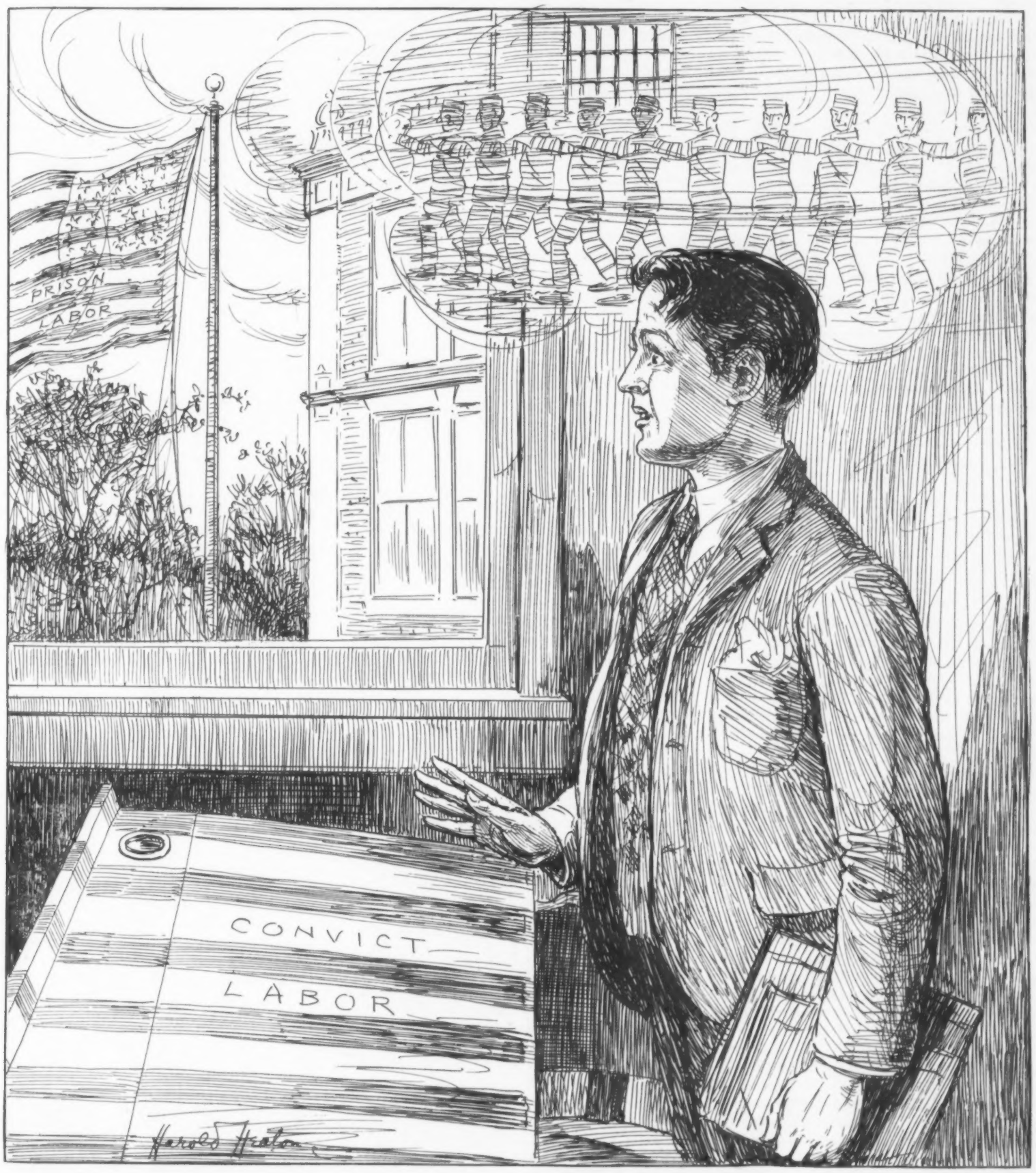

Bars-and-Stripes and Stars-and-Stripes in the Schools!

"Supervision by Remote Control"

C. Marcus Wienand, School of Education, University of Washington

For the uninitiated, it might be well to explain that the term "remote control" in radio broadcasting is used to designate the ultimate in separating the radio performer from his listeners. By the use of "remote control" the broadcasting station instead of being the originating point for programs becomes only a junction point linking two lanes of communication, of which one comes from the entertainer wherever he may be—in public hall, banquet or distant studio—and the other goes out through the air to the listeners.

Radio has been responsible for the appearance of a new type of supervision in classroom work. Because the supervisor is at a remote point and a loud speaking telephone carrying his message is substituted for his physical presence in the classroom, I am going to borrow the radio term to designate this type of supervision as "supervision by remote control."

New York City has experimented with "supervision by remote control" and in Oakland, California, it has been made a regular procedure in classroom work. Supervision by remote control is hardly out of the experimental stage yet, but having made its debut in the field of educational methodology, should receive the attention of school administrators.

In the experiments referred to a supervisor directs a model class before the microphone of a broadcasting studio. Every word spoken to this model group is broadcasted and received on loud speakers by other classes in scattered school buildings. Such subjects as machine accounting, penmanship, physical culture and arithmetic have been successfully taught in this manner.

The classroom teacher is still present in a role not materially different from the usual situation where she turns her class over to a visiting supervisor and acts as observer. In reality her position is one of increased importance as she turns on a loud speaker and tells her class to work under the direction of a remotely located supervisor. Instead of taking a back seat in the presence of a specialized supervisor, she is still in charge of discipline, but free to observe the individual difficulties of members of the class. Oakland teachers, according to a recent article in the Journal of the N. E. A., are convinced that they can help their classes more by noticing individual difficulties and also have noted a greater concentration by the pupils in taking directions from the loud speaker.

For those who are tempted to decry this "disembodied" presence of a teacher as sacriligious to the art of teaching, I will remind them that most of our instruction today is of that type except that the thoughts of a great teacher are brought to students through the medium of the printing press and the printed page. The voice of a supervisor brought to pupils by radio and a loud speaker is really a more direct contact than the written words of authorities interpreted by the classroom teacher.

It is not the purpose of this article to argue for or against "supervision by remote control." Personally I do not believe that enough experimentation has been done to either commend or condemn it. An attempt will be made soon in the laboratories of the Department of Psychology of the University of Washington to measure the efficiency of loud-speaker instruction. However, for the time being administrators will have to decide for themselves whether the plan of "supervision by remote control" is attractive enough to warrant introducing it into their school systems. Whether to employ a small group of specialists to direct a large number of classes simultaneously or a larger corps of supervisors to make periodic visits to all classrooms will receive the consideration of many educators. There will be some who will be sufficiently impressed by the results at Oakland to endeavor to achieve similar results in their own school systems. To these, this article is intended to carry a word of advice and perhaps warning before they try to induce their school board to purchase a broadcasting station or lease broadcasting services from local commercial stations.

As I have said, radio has been responsible for the introduction of "supervision by remote control" but such supervision must not be inseparably linked with radio. The invention of the motion picture machine incepted a movement for visual education. What old-time educator would have thought of his childhood toy—the "magic lantern"—as an important adjunct to classroom apparatus? Yet after considerable experimentation in visual education, a modern form of the magic lantern and not the motion picture machine has been found to be more efficient in classroom work. In much the same way, when the principle of "supervision by remote control" is well established in schoolroom practice, it will not be "radio transmission" that will be used to connect supervisors to scattered classrooms, but a modification, I believe, of our present school telephone systems.

Consider a few of the disadvantages of using radio in school work. I am not sure that administrators will want a large part of their school supervision to go out over the air where any one at will can tune in on it. The supervisor, speaking before the microphone, must realize that in addition to a number of classes that he can visualize, he is also speaking to a host of adults also listening in, many of whom are critical and eager to find fault. Very few of them have any appreciation of what is being done since they do not see the classes responding to the broadcasted instructions.

The sources of interference to radio reception must also be mentioned. These include interference from power apparatus, spark wireless stations, static and squealing by single circuit regenerative receiving sets in the neighborhood of the school receiving set. As a result of the operation of these interferences, a speech reproduced by radio is likely to be distorted or frequently interrupted by crackling and whistling noises. Much improvement in this respect, however, can be expected in the future as efforts are being made to control and eliminate all man-made causes of interference. It is doubtful, though, whether radio reception can ever approach the clarity and uniform conditions that can be attained in telephone lines.

Another disadvantage that might be anticipated in using radio transmission for supervision in school work, where the services of a private station are leased, is the limit put on broadcasting hours for school work. The morning hours are practically the only "dead" hours in commercial broadcasting and available for school work. On the other hand, a network of wires connecting loud speakers in all school buildings to some central point would be in readiness at any time of the day or evening for service.

In none of the experiments in "supervision by remote control" has there been any attempt, as far as I can ascertain, to link up classrooms by private wires. The conference circuit in use at the Roosevelt High School of Seattle is a precursor of what we may expect. This circuit is built into the telephone switchboard that serves all rooms of the buildings as an intercommunicating system. When the principal desires to give announcements or instruction to his teachers he can have his switchboard attendant call as many of his teachers as he desires to their telephones. They receive a signal that they are to wait on their telephones and the attendant receives an indication on her board of who have responded. When all are at their telephones waiting, the attendant switches in the principal's telephone, enabling him to speak to all of the teachers at the same time.

Extending the scope of such a system, to a city-wide assembly system, that would link together inter-communicating systems in all buildings, and having jacks in each room into which a loud speaking telephone could be plugged, we would have a system whereby all history classes in the high schools or all seventh grade classrooms in an entire school system, for example, could be linked together at the same time, and a supervisor at a central point could speak to all these classes at the same time.

In addition to "supervision by remote control" auditoriums could be linked together for feature programs. A distinguished visitor to a city would probably be glad to speak to the school children through such a system, where it would be impossible for him to visit all school buildings personally to give talks. In an article appearing recently in a radio journal, Dayton, Ohio's, school broadcasting system was described and mention made of success in inducing speakers of note to appear before the microphone of the broadcasting station of Parker High School, which broadcasts for the other schools of Dayton.

An interesting system, known as the "assembly system," is in use at the Palmer School of Chiropractic in Davenport, Iowa. Every classroom is provided with a loud speaker connected direct to the office. Whenever a distinguished visitor or successful graduate visits the school, he is invited to speak to the students from the office using this assembly system. At the assembly signal, each class stops whatever it is doing and turns on the classroom loud speaker. At the conclusion of the talk the classes are ready immediately to go back to their work.

Radio offers great possibilities in educational work. The School of Education of the University of Washington is preparing plans for state-wide high school assembly programs, in which musical features, entertainment and addresses by well known speakers will be given that hitherto have been enjoyed only by metropolitan schools. Radio is the only feasible means of communicating such a program. Other uses for radio in educational work will soon be developed.

"Supervision by remote control" as an established procedure in a city school system should not be transmitted by radio if it is possible to secure a private network of wires to accomplish the same thing. My advice to administrators who desire to experiment with "supervision by remote control" is to consult local telephone officials who will be glad to prepare plans and estimates for a city-wide interlinking system that will be more satisfactory than radio and less expensive. Leave the air clear for larger projects such as state-wide programs or programs for parents and school patrons.

On Selecting School Superintendents

William Estabrook Chancellor

School Boards Desire Competent School Heads

At present there are 3,600 men in the office of county school superintendent or its equivalent under some other title, and 3,000 men in the office of state, city, district or village school superintendent. More than one-half of these men were not in such offices ten years ago, and to judge the prospects of the future by the experiences of the past, probably not more than one-half will hold such offices ten years hence. The average stay of a man in a school superintendency, for the country as a whole, appears to be three and a half years; and the average man who tries this field does not remain in it for so long as ten years.

Somewhat more than one-half of the school superintendencies are filled by boards of control by appointment, usually styled "election," and the remainder are filled by popular vote at the polls in actual political elections. In several states, the laws forbid any man to hold consecutive terms as county school superintendent. In one such state, if not more than one, the custom is for the superintendent and deputy to alternate terms at least for a period of time; by this plan when A. Y. is in the higher office, B. X. assists him, and when B. X. wins, as he usually does, then A. Y. becomes the deputy.

That there is a genuine desire on the part of nearly all boards of control to secure good school superintendents when changes are made, is the unanimous opinion of men with nation-wide knowledge of the field.

Where the choices are made by the people at the polls, usually there is no severe contest between candidates and parties, but often no contest at all, there being but one man in the field as candidate. In some states, with popular election, the public standards are high, and the county school superintendents are of equal merit with the city men.

The changes that are made in school superintendencies, filled by appointment of boards arise five times as often from the initiative of the boards as by the initiative of the occupants of the office. The most frequent cause of change by the boards is change in the personnel of the boards; new men come into authority and desire new agents to carry out their new notions. Next to the most important cause is a feeling on the part of the boards that the personnel relations with the school heads have become unpleasant. Nearly all the changes initiated by the men themselves in the office of school superintendent arise from a desire for higher salaries; and next in order of frequency is ill-health.

Competent school superintendents are mostly of three types or kinds, and no man ever represents a compromise between these types or kinds because they are mutually irreconcilible.

The Developed School Principal

1. *The developed class teacher and school principal.* This man usually does not arrive at his first superintendency before he is forty years old. He went to a fair elementary school in city or country, to a fair high school or academy, to a fair normal school or college, usually interrupting this procedure by years of rural school teaching in order to go on with later studies. He secured his normal school or college diploma in his middle twenties or even later. Typically, he has remained from youth in the same general habitat. He knows his people from the ground up. Frequently in his thirties, he has done graduate work at some good university for a year or two of academic time, worked out in summer sessions. Also, he knows thoroughly the methods and devices for teaching every subject in the elementary school curriculum, and often he knows most of the subjects in the high school and city normal school courses well enough to teach them. Offhand, he can go into almost any class and give a demonstration lesson. He has a natural facility in pedagogics and great liking for both teachers and youth.

Men of this type and kind are more numerous than those of either of the other types. They are generally popular with the teachers whom they have controlled as school principals or as city school superintendents or in the county office. They are needed in cities with generally poor or young teachers, requiring constant help of one kind or another. They have proven their competence not only in small cities but also in large. Not many of them are well liked by even the boards that employ them; and the reason is that these developed principals are distinctly specialists in pedagogy, and their talk is of the shop. These men are marked by their profession just as most preachers are so marked; most physicians; most college professors. They do not even care to avoid seeming to be what they are. They are proud of being good teachers; and holding the office of school superintendent is a mere incident in their lives.

The Socially Gifted School Superintendent

2. *The business-like, politically minded, sociable school chief.* Usually, this man has arrived at his first school superintendency by the time that he is thirty years old. He went to any kind of elementary school, to a fair high school and to some college, usually without any interruption in order to gain funds for further study, but if there was interruption, he sold books or other merchandise, or clerked in some store or perhaps worked on a railroad. Once that he had his diploma, he made of it a commercial asset, and within a few years, usually in the habitat of his youth, he became the head of an independent school jurisdiction, with ten or twenty teachers. This man has a natural gift for getting on with persons not teachers, especially with board members.

He joins many organizations as occasion affords, often attends summer schools without seeking credits, goes to all educational gatherings for which he can arrange expenses, and until he is forty years old, plays baseball with the boys of his high school in the spring and football in the autumn, or serves as volunteer coach. He wins promotion after promotion and at fifty years old may be found perhaps a thousand miles from his native locality in the superintendency of a city of large population. His greatest merit is that he makes the schools of his jurisdiction popular; he is an advertiser and a harmonizer. Some of the best school superintendents of the land belong to this type or kind.

This man commands a higher salary than does the man of the first type because he stirs up rivalry for his services. Seldom does he finish his life-career in education, since usually in the forties or fifties, some business organization, seeing his abilities and traits, offers to him more money than he is likely otherwise to get, and a prospect of a good income into considerable age.

Cities with friction among the teachers, cities in which the schools cannot get enough money from the taxpayers for proper operation, cities much inclined to change their board members frequently, need this man.

The Educational Administrator

3. *The scholarly, efficient, trained school administrator.* This man probably went to a first class elementary school, a first class high school, a first class college, or wanting a good education in these earlier periods, immediately after college graduation, proceeded to a good university and started graduate work. He had his college diploma at 22 years of age, and had done several years of residence graduate work before he entered his thirties. By this time, he became a city school superintendent somewhere, perhaps hundreds of miles from home.

He likes direction and control, responsibility and authority; but he is better on planning than in details. Seldom do his teachers like him, partly because he cares about the content of their teaching as well as about their methods, and is known to be a constant student of the subject-matter of the courses offered in his schools.

The first man calls teachers' meetings and discusses pedagogics; the second man calls teachers' meetings and discusses extra-curricular activities, often parent-teacher interests and visits of teachers to the homes of the pupils; but this man calls more meetings than both the other men together, and no one can predict what the meetings will be about, for he brings in outsiders from educational experts to prominent leaders in any and all public affairs and business lines.

This competent man has his uses; cities with good schools and good school sentiment; cities that keep the same board members in office for many years; cities with sufficient funds do well to try to find him when any change is forced upon them. But he is out of place exactly where the men of the other types make their successes.

The first business, therefore, of any board seeking a new man is to prevent itself from being victimized by the electioneering methods of candidates by proceeding to make the selection itself in the light of the fact that a good fit in some city may for this very reason be a misfit in another.

This principle of action by the board helps to solve the problem of whether to take a local man, a neighbor, or a man from elsewhere than the general habitat. Though not always true, it is generally true that the man of the first type, the developed principal, does not prosper far away from the scenes of his early life. And it is just as generally true that the man of the second type can adjust himself quickly to any city that falls within the range of his interests, any city that needs a man of sociable nature, well acquainted with school affairs but not a master of pedagogy or a specialist in school administration.

The men of the third type or kind are the most difficult to find and the most difficult to fit; they command the highest salaries, not because there is so much competition for them as because they make their own market, refusing to work for less than they think sufficient. They retire from the control of schools, or are retired without later opportunity to serve the public as school heads, often at less than fifty years of age, and become college professors, newspaper editors, book writers, or perhaps turn to farming without regrets.

In appearance, the position and work of the school superintendent, whether of state, county, or city, are honorable, dignified, responsible, authoritative and attractive. To some men, in reality, the office has proven so for a lifetime. But to many men, the case is otherwise. They have taken positions for which they have not been fitted by temperament and earlier experience, declining or failing to seek positions in which they might have prospered. With such boards as we have, with such popular elections as we have, irrespective of whether the boards are appointive or elective, irrespective of whether the elections are partisan or not, irrespective of whether the scene is North or South, East of Appalachians, in the Middle West or on the West Coast, there will be no great change in the situation as it now exists respecting school superintendents. The peak month of change is from June 15 to July 15, and the peak month of entrance into the new work is September.

How may a board know easily and surely whether this man under investigation or that man belongs to the type required for the needs of the city? 1. By his documentation. 2. By his earlier experience. 3. By his conduct when interviewing board members.

Documentation of Candidates

Documentation refers to all written records. Among the men under review, there may be two or three distinctly superior in such documentation to any of the others. This superiority itself indicates that the man may belong to the third type and probably does not belong to the first. Good schooling tends to develop either the man of the world or the trained school administrator.

The earlier experience of a man shows whether he has changed about frequently or not. If he has so changed, did his market change him by offering frequently to pay him more for his services, or was he restless and did he change of his own initiative? Perhaps the board that dropped him in one city did so on grounds that should recommend him elsewhere. The man who has changed frequently without rising fast in his profession probably belongs to the second or third type of school head. The man who has stayed for years in the same city, and perhaps even for years in the same position probably belongs either to the first or third type.

Superficial and Inessential Evidences

The conduct of the candidate is inevitably self-revealing. One man talks of his outside interests, his financial investments of one kind or another. One man speaks of his social connections, his family and friends. This man is physically vigorous and active, mentally alert. Another man is impressively slow of speech and considerate, a listener. Perhaps some candidate has already discovered much regarding the city school system and has suggestions of improvement. Another candidate knows just as much about the city, but is non-committal as to changes. Each of these signs helps to locate the candidate as to his class and kind.

A few instances may serve. A. D. C. lost a city school superintendency for which he was being very carefully considered because he happened to mention to one board member at a dinner to which he had been invited that his own average income for ten years prior had been about $8,000 a year from outside interests. Another man lost his election that seemed secure because he spoke of a poultry farm of which he was sole owner. These items might have helped in other cities to secure elections; they were fatal in these instances.

A man who happened to have a known ancestry for many generations forgot that nearly all the board members in the new city where he was under consideration were themselves either foreign-born or the sons of foreigners by birth. The citation of his ancestry gave offense. Yet this same man was elected to a larger superintendency that same season, because of this ancestry. One man lost his election because the board thought that he was too much absorbed in the welfare of a family of six children; in this unusual case, the board gave out a statement to the press that this man had been set aside because of his large family affairs. A man who was a natural athlete and talked of his summer recreations was set aside by one board whose president asserted that no good American desires more than two weeks of summer vacation. Of this same man, another member remarked, "He sees too much. If he came here, he would see enough needs to keep us busy for ten years. We want a quieter man."

A very large city took under consideration a man with a splendid reputation, entirely justified. They sent for him, paying his expenses. They turned him down because they, and not he, did the talking.

A board of education invited three men to a city, each to remain three days. Each visited several schools. Then one by one, each was asked to suggest improvements. Each did so in writing. One of these men wrote a very short report, on the whole praising the schools that he had visited. He was elected unanimously, and dropped at the end of a two years' contract unanimously by a new board. The two men who cited faults in the schools of this other city remained where they were for at least several years longer, and were wont to say cheerfully that the plan was a trap. This, however, is the ungenerous view, for any schoolman should know enough about schools to see their good and their poor points of the superficial kind at once. The really serious trouble in this city was that every elementary school had but a few classes and that no such school had a supervising principal; in consequence, a staff from the main office had to do all the supervision. It was, in consequence, a city that needed overhauling by a man capable of planning its future, a man of the third type. Instead, it employed a man of the second type.

Comparative Salaries

Candidly viewed, the superintendency of schools of a large city is a far more difficult, a far more influential, a far more responsible office than even a university presidency. The superintendency of a small city is a more important office to human society than the presidency of a small college. Yet we fail, as a public, to understand. In New England and at some points elsewhere, it is the common thing to pay a college teacher $6,000 a year and a university teacher $8,000. Such salaries are available only to the superintendents of cities of at least 100,000 population save in a few exceptional cases. In the comparative view, no college professor is worth to human society more than is the city or county school superintendent with but 5,000 youth in his control. The fault lies with our traditions, our sense of social prestige. We fail to see that the most important years in vitalizing the minds of our citizens come before they ever get to college. Not that we pay our professors too much but that we fail to compete in the intellectual market for the best talents to place in charge of city and county school systems.

Finding the Right Man

The way to begin is with the individual city or county where the board selects the new man. There are almost half a million men teachers in America. That is the field from which to choose. In 1884, Brooklyn, N. Y., before the days of Greater New York, took as its city school superintendent a man whose only teaching experience had been for two years in evening schools. He became one of America's ablest city school administrators, though his own education had all been completed in his native Ireland—William H. Maxwell. This is an extreme illustration of how good school heads are found, apparently almost anywhere. But both good luck and unusual wisdom on the part of the board must conspire when within the local force a man is found who without any executive experience can fill the highest office in the schools with success from the start.

Personal Relations

Board members sometimes fall into the notion of taking a man of their own age for school chief, and sometimes they decide to take a man younger than themselves. This notion throws out of consideration the fact that there is nothing inherent in the relation of the board to the superintendent that makes it necessary for the school board members and the school chief to be personal friends. This is said in all candor by one who has served four different cities and whose present most intimate personal friend is a one-time school board member unknown to him before he entered service in that city. Of 77 different board members in this experience, the majority of the living survivors became and remained his friends.

Yet many a good board member never has cared personally for the school head though intelligently supporting nearly all of his measures, and voting for his reelections. Again, there is no reason inherent in the relation of the school head to the teachers why he should be popular with them. In a sense, the teachers are employees of the board, and under the school superintendent accordingly. Employers and their agents are seldom popular with their employees. It is essential that the teachers should have over them a man whom they respect for his character, attainments, manners, and office; but many a woman teacher who tells the board member's wife that she doesn't "like the school chief," means that she would not like him as a brother, husband, or father; this same woman will honestly say to the board member himself that she respects the man as an educator, which is all that is needful. Such hair-splitting may seem far-done to the man, but it is natural to the women who have the conversations.

A Few Safe Rules

There is one safe rule for every board of school control, "When in doubt, and the school superintendent is willing to remain, keep him."

There is another rule, not quite so general and yet on the whole safe, "When another city offers to take a man elsewhere, and the difference in salary is such as public sentiment will support, keep him."

And there is yet another rule, "The younger the man was when he became an independent school head, saying 'Yes' and 'No,' the better the chance that he has the sense of decision required of the office."

When a superintendent becomes a candidate in another city and has (say) a $5,000 salary, and a leading rival has a salary of (say) $4,000, and the city looking for a new man is to pay (say) $7,500, how shall the city view this difference? The answer is too complicated for com-

(Continued on Page 139)

The Standardization and Distribution of Supplies and Equipment at Rochester, New York

J. S. Mullan, Secretary of the Board of Education.

The word *"standardization"* covers a vast field and up to the time of our present installation we used it terminologically as a classification of supplies for courses of study, alphabetically arranged. Under our new system we have not only *standardized* the kind of supplies and equipment but also "unitized" the quantity of each supply that would be required in the elementary and grammar schools. The system is a little more complex in the high school and shop schools where the problems are more varied. We hope within the near future to standardize high school and shop schools also. I realize that other cities have standardized on quantity but to my knowledge the facts have never been brought to the attention of our organization. We carry in stock in our warehouse a year's supply to cover the demands and needs of our high and vocational schools.

We deemed our old system fairly up to the average, but in order to better minimize wastefulness it was considered wise to make a careful study of our entire system. A committee, composed of the chief clerk in the secretary's office, four principals from our various type schools, and the secretary, was appointed to study conditions and to establish, if possible, a more efficient system. This committee, before arriving at a conclusion, spent approximately a year in making a careful study and in securing data upon which to formulate plans.

A questionnaire was sent to the principals of all our schools requesting that each teacher in each grade and in each department submit a list of the different items which in her judgment she considered necessary per pupil, per item, per semester. In reply we received an avalanche of requests. If all the requisitions were granted, a bond issue would be required to meet the expenses. Although we received a great deal of information, the questionnaire did not bring the desired results. We then planned to classify the schools into American, semi-foreign, and foreign, according to the prevailing enrollment, but found that even this did not solve the problem. Finally, we conceived our present method, viz., that of grouping the materials used as outlined in our various courses of study and of arranging them to meet the requirements of our accounting system as to "character and object of expenditure," keeping in mind the necessity of—

1. Eliminating clerical work for the teacher,
2. Preventing duplication of clerical work in the office and warehouse,
3. Distributing the stockkeeper's work more uniformly throughout the year.
4. Reducing the cost of transportation—the great slogan of today.

Eliminating Clerical Work For The Teacher. Considerable time and thought on the part of the teachers are required in estimating the amount of materials needed. With no deliberate intention to do so the amounts said to be needed are often greatly over-estimated. Then, too, teachers are not always familiar with the correct names for the various materials, and as a result considerable time is required in making adjustments. Frequently teachers will fail to order supplies in time to have them on hand when needed. Delivery schedules often have to be changed due to delays in making deliveries. All of these objectional features are overcome in the system which I shall describe to you. I am submitting a set of forms that you may more easily follow me.

First, we start out with a clean schedule by using Form S-1. Our INVENTORY-CREDIT (Form S-1) is sent to the schools at

S-1

Return to Mr. J. S. Mullan 301 Municipal Bldg.

Board of Education Rochester, N. Y. Bureau of Supplies

Date_____ School_____ Grade A or B_____ Room No._____ Teacher's Name_____

N-None on hand
X-Do not use
Write figures plainly

FIFTH GRADE SUPPLY

INVENTORY-CREDIT

	Amt. on Hand	Do not Enter in these columns Cost	Amt.
SUPPLIES FOR RENTERS			
Composition Books			
Mills Writing Book F			
" " " #4			
Paper-Ink Sheets			
" Pencil "			
" Permanship 9x12 Ruled "			
Pencil-Common			
Penholder			
Season Notebook			
ART FOR RENTERS In Semi-Department Grades Art Teacher will fill out the following:			
Paint-Black Cakes			
" Blue "			
" Red "			
" Yellow "			
Paper-Drawing 9 x 12 "			
Pencil-Drawing #312			
Eraser-Soft			
GENERAL SUPPLIES			
Bogus-Draw 9 x 12 "			
Manila Construction 9 x 12 "			
Tonal Asst. 17 Colors Alternating 9 x 12 "			
White Cutting 9 x 12 "			
Chalk-Hard Box			
Fasteners Magill #1 "			
Skewer 4½" for Paste			
ART			
Blotter 9 x 12 Green			
Bogus 9 x 12 Sheets			
Coated 9 x 12 Alternating #13-20-21-22-23-24-25 "			
Cover Lot. Wt. Plain Blue D "			
Brown C "			
Green F "			
" Hyw. Wgt. 27 Fuller "			
Manila Construction 9 x 12 "			
Manila 1/4 Sqd. " 9 x 12 "			
Manila Outline Hickory Tree 9 x 12 "			
Manila Outline Chestnut 9 x 12 "			
Tonal 9 x 12 Asst. 17 Colors Alt. "			
White 1/16 Squared 6 x 9 "			
White Cutting 9 x 12 "			

FIG. 1. TEACHERS' INVENTORY.

the end of the school year in June, asking that a complete inventory be taken of all supplies on hand in each room. This form is returned to the office of the purchasing department for credit, and the supplies on hand in the schools are returned to the warehouse. After a year's trial there should be very little to be returned. This procedure also serves as a check up, enabling us to compare the consumption of the various grades. At the same time we call for an inventory on book rentals and general educational equipment on the blank called *Inventory Equipment* (Form S-2). From this blank we

S-2

Return to Mr. J. S. Mullan 301 Municipal Bldg

Board of Education Rochester, N. Y. Bureau of Supplies

Date_____ School_____ Grade A or B_____ Room No._____ Teacher's Name_____

N-None on hand
X-Do not use
Write figures Plainly

FIFTH GRADE EQUIPMENT

INVENTORY-REQUISITION-CHARGE FORM

One Semester's Book Rental and General Equipment

	No. of Renters	Amt. on Hand	Do not Enter in these columns Amt. Rec'd Inv.	Pkg. No.	Cost 1st Del.	Amt.
BOOK RENTAL AND INDIGENTS						
Holmlus Reader Book V						
Wilson Book 5						
Speller Pt. 1						
Webster Dictionary Elem.						
McMurray & Parkin Geog. Elem.						
Progressive Music Book II 5B						
Junior Laurel Songs 5A						
ART In Semi department Grades Art Teacher will fill out the following:						
Water Pan						
4 Col. Paint Box						
#7 Paint Brush						
#8 " "						
GENERAL EQUIPMENT						
Erasers-Blackboard						
Carbs-Flash 21 x 5						
15 x 5						
9 x 6						
Paste Jars						
Pointer-Blackboard						
Punch						
Rulers-1/8"						
Scissors-Sharp						
Yard Stick						

FIG. 2 (S-2). TEACHERS' REQUISITION.

determine the needs for the following semester. It is possible that our book rental system is foreign to most cities and, therefore, a word of explanation may be helpful at this point.

While we do not furnish free textbooks and supplies to all pupils, we do furnish them to indigent pupils whose parents make affidavit that they are unable to purchase books. We found, when the book rental system was inaugurated, that there were a number of parents (termed "in betweens") who could not conscientiously sign an affidavit that they were unable to purchase books and supplies. These parents could not pay the full cost of the books, but were able and willing to pay at least a part. In order to meet this situation our board established a "book rental system." The wholesale cost and the estimated life of all books and supplies are determined and, with these as a basis, a fair rental fee designed to cover the cost is charged each semester. The rental rates vary in the different grades. This system is taken advantage of by a large number of pupils and necessitates a modification in our method.

The next procedure is to secure from the schools, on a *Registration Blank* (Form S-3),

Form S-3

BOARD OF EDUCATION
ROCHESTER NEW YORK
BUREAU OF SUPPLIES
307 MUNICIPAL BLDG

Note: When Grades are mixed enter under grade number.

REGISTRATION BLANK

(To be returned to J. S. Mullan within 3 days.)

SCHOOL_____ DATE_____

Please fill in the following:

Grades	Teachers Name	Room No.	No. of Renters and Indigents in each Room Specify A or B Grade	Total No. Pupils in each room
7 and 8 Grades Specify No. of Indigents		Signed— Principal's Signature		

FIG. 3 (S-3). REGISTRATION BLANK.

the estimated registration for the succeeding term. The question naturally arises—"In case the registration exceeds the number estimated, what do you do?" In such a case the principal sends in another *Registration Blank* (Form S-3) to cover emergencies. Should the registration be under-estimated, we allow the teacher in each respective grade to interchange supplies on the basis of her allowance per pupil, per room. The schedule called the *"Standardization of Supplies and Equipment in Elementary and Grammar Schools"* (Form S-6). Each teacher is provided with a copy of this form. Another question may arise in your mind. "Would each school use the same kind of materials?" It does not often happen, but in case it should, the principals are given the privilege of returning such items as are not required and of substituting others to take their place. When Form S-3 is filled in to meet requirements, it is sent to the office of the purchasing department. This completes requisitioning for one-half of one term for supplies carried in the warehouse.

Reducing Duplication of Clerical Work in the Office and Warehouse. The new system reduces the amount of duplication of clerical work in the office and warehouse when the registration (Form 3) is entered on the *Order and Charge Supply Blank* (Form S-4) and the standardized allotment is entered from the *Chart* designated as Form S-7. This *Chart* gives the schedule of the allotment per pupil per grade and is of great value because it provides us with reliable figures. These orders, when completed as Form S-5, are sent to the warehouse to be filled and are then returned to the office of the purchasing department, where they are priced from *Chart* (Form S-7½). This you will note is similar to *Chart* (Form S-7) with prices per pupil per grade. It is used by the charge clerk in entering net amounts on her code card (Form S-8) and is then punched for the tabulating machine, thus completing the transaction. We also ask for another *Registration Report* (Form S-3) which is used in distributing the second allotment of supplies

Teacher's Copy — FORM S-6 — BOARD OF EDUCATION — ROCHESTER, N. Y. — BUREAU OF SUPPLIES — February 1925

FIFTH GRADE

STANDARDIZATION OF SUPPLIES & EQUIPMENT in ELEMENTARY & GRAMMAR SCHOOLS

Per Pupil Per Semester	Cost.	Life of Bk.	Bk. Rental per Term.	Bk. Rental per Sem.
EQUIPMENT FOR RENTERS & INDIGENTS.				
1 Coloring Reader Book V	.78	4		
1 Junior Laurel Songs 5A	.80	4		
1 McMurray & Parkin Geog. Elem.	1.00	8		
1 Milne Arith Book 5	.54	4		
1 Progressive Music Book 4 & 5	.56	4		
1 Scholar Part 1	.80	8		
1 Webster Dictionary Elem.	.90	4		
1 Water Can	.016			
1 6 Color Paint Box	.180			
1 17 Paint Brush	.067			
1 24 "	.092			
SUPPLIES FOR RENTERS & INDIGENTS				
6 Composition Books 25 pp	.045			
1 Mills Writing Book #4 Gr. B Fall	.105			
Fall Gr A, Book F				
Spring B & A Bk. F				
40 Stub. Paper 1pk L. & M.	.128			
40 " Pencil L. M.	.056			
60 " Penmanship Spec. Ruled 9x12	.092			
2 Pencils Common	.022			
1 Penholder	.019			
1 Seneca Note Book	.02			
1 Eraser Soft	.016			
1 Cake Paint Black	.019			
1 " Blue	.019			
1 " Red	.018			
1 " Yellow	.018			
1 Pencil Drawing #312	.022		5B-2.25	
100 Sheets paper drawing	.166		5A	
	5.85			
GENERAL SUPPLIES				
1 Bx. Chalk Hard Per Room				
1 Bx. Fasteners Wagill #1 per room				
1 Stub. Paper Bogus 9x12				
1 " Manila Constr. 9x12				
1 " Tonal 9x12 4 colors Alternating Assortment				
1 " White Cutting 9x12				
1 Skewer 4½" (for paste)				
ART				
1 Blotter 9x12 Green				
1 Sheet Paper Bogus 9x12				
1 " Coated 9x12 Assort. #19-20-21-22-23	.19-.20-.21-.22-.23-.24-.25		Alternating Assortment	
1 " Cover Hvy. Wgt. #27 Blue G. Green G. Brown G.				
1 " Cover Hvy. Wgt. #27 Parchment				
1 " Manila Constr. 9x12				
1 " Manila Constr. 12" Sq. 9x12				
1 " Tonal Assort #19 Blue #21 Purple Assortment				
1 " White 9x12				
1 " White 9/16" 6 x 9				
1 Outline 9x12 Hickory Tree (June)				
1 Outline 9x12 Chestnut Tree (June)				
GENERAL EQUIPMENT FOR ROOM				
1 Erasers Black Board				
25 Flash Cards 21 x 6				
25 " 15 x 6				
25 " 9 x 6				
1 Ewis Jars				
1 Pointer 36"				
1 Punch				
25 Rulers 12"				
1 Scissors Sharp				
1 Yard Stick				

In Each Departmental Grades Art Teacher will be responsible for Art Materials.

FIG. 4 (S-6). LIST OF STANDARD SUPPLIES.

(ordered on Form S-4½) in the middle of the term. The procedure described above is used in making this second and last distribution for the semester.

Distributing Stockkeeper's Work More Uniformly Throughout the Year. The great number of requisitions which come in at certain times of the year make it difficult for the store department to be in readiness to make prompt delivery. To overcome delay we found it wise to assume that grades were of uniform size. We use 35 pupils as a basis in the general and art materials, thus enabling the stockkeeper to get his packages ready throughout the year. He, of course, marks the grade number on the outside of each package. When Form S-4 is sent to him, he marks the room and teacher's name on the package. If the registration reported is greater than 35, he makes up the deficiency from his stock of assorted packages (three and five pupil supply packages). This method has greatly simplified the system. During the vacation periods we have clerks from various schools count paper so there may be no errors in the allotment of supplies. One sheet per pupil means thousands per school and hundreds of thousands for the entire system, so that the need for accuracy is apparent.

Reducing the Cost of Transportation. We decided on two deliveries per term with an interval of ten weeks between deliveries. As there are exceptions to every rule, we provide for emergencies so as to accommodate the revised registration after school has been in session a few weeks. Formerly we provided for a monthly distribution of supplies but because the schools usually forgot to order one or another of the materials needed, we found it necessary more often to make weekly deliveries. In these days of high cost of trucking, transportation proves a large item. The new plan of making deliveries has materially reduced the cost of transportation in the Rochester system.

When supplies or equipment are delivered to the schools they are not sent to the storeroom of the school but direct to the room. In this way each teacher has his or her allotment covering a period of ten weeks and is held

FORM S-4 — BOARD OF EDUCATION, ROCHESTER, N. Y. — BUREAU OF SUPPLIES. — Date, School, Grade A or B, Room No., Teacher's Name

FIFTH GRADE

Order-Charge Form
First Distribution of One Semester's
Book Rental-General-Art Supplies.

Quantity per Pupil		No. of renters & Ind.	Pkg. No. 1st	Pkg. No. Del.	Cost	Amt.
GENERAL SUPPLIES FOR RENTERS & INDIGENTS.						
6	Composition Books 25 pp					
1	Mills Writing Book #4 Gr. B. Fall					
	Book F Fall Gr. A					
"	F Spring B &					
40	8½ Stub. Paper 1pk L. &					
40	" Pencil L. M.					
60	" Penmanship Spec. Ruled 9x12					
2	Pencil Common					
1	Penholder					
1	Seneca Note Book					
ART FOR BOOK RENTERS & INDIGENTS.						
In Semi-Departmental Grades Art						
Teacher will fill out the Following						
1	Eraser Soft					
1 Cake	Paint Black					
1 "	Blue					
1 "	Red					
1 "	Yellow					
1	Pencil Drawing #312					
100 Sht.	Paper Drawing					
GENERAL SUPPLIES						
1 Bx.	Chalk Hard					
1	Fasteners #1					
1 Sht.	Paper Bogus 9x12					
1 "	Manila Constr. 9x12					
1 "	Tonal 9x12 Assort. #19 asst. col.					
1 "	White Cutting 9x12					
1	Skewer 4½" (for paste)					
ART						
1	Blotter 9x12 Green					
1 Sheet	Paper Bogus 9x12					
1 "	Coated 9x12 Assort #19-20-21-22-23					
1 "	Cover Hvy. Wgt. #27 Blue G. Green G. Brown G.					
1 "	Cover Hvy. Wgt. #27 Parchment					
1 "	Manila Constr. 9x12					
1 "	Manila Constr. 12" Sq. 9 x 12					
1 "	Tonal 9x12 Assort. 12 asst. col.					
1 "	White 9x12					
1 "	White 9/16" 6 x 9					
1 "	Manila Outline 9x12 Hickory Tree (June)					
1 "	Manila Outline 9x12 Chestnut					
* Special Requester.						

FIG. 5 (Form S-4). TEACHER'S ORDER FORM.

responsible for them. This is our plan for grades one to eight, inclusive.

We have standardized "special department" supplies in the grammar schools most satisfactorily. They are—

Boys' Vocational Form S-9 standardized for a class of eighteen pupils with equipment and supplies classified as to trade names, alphabetized and detailed to cover general warehouse and outside purchasing.

Girls' Vocational Form S-10, providing for a class of twenty pupils.

Health Education, elementary and grammar school gymnasium Form S-111.

Health Education, senior and junior high school gymnasium Form S-112.

Kindergarten Form S-13 for a fifty pupil class.

Primary and Intermediate Form S-15, for an eighteen pupil class.

These forms are dissected by perforations and sent either to the warehouse or vendors. If to a vendor, they are attached to our regular order (Form 23), achieving another point in efficiency in our purchasing department. They are printed requisition forms, in triplicate, and are used as orders and charge transactions. We have a standard code of colors throughout our entire system. White is for the vendor, blue for the office copy, yellow for the school copy and pink for the receipt.

In by-gone days we had a warehouse requisition blank with a catalog list of warehouse supplies. When ordering we gave instructions, if items not listed in storehouse were required, to order on a purchase requisition. Whether the persons in charge thought they had memorized the catalog so well as never to refer to it or whether they would not make the effort to conform to the rules, I do not know, but invariably some of the schools would have warehouse items on a purchase requisition and vice versa. Now all of our warehouse items are listed in one or another of the department schedule forms. They are ordered once a term or year as specified. Store space is provided in the schools wherever conditions make such provision necessary.

The forms which have not been standardized to a unit are as follows:

Shop-Requisition Charge (Form S-16).
High School Office Supplies (Form S-17).
Grammar School Office Supplies and Printed Forms (Form S-18).
First Aid (Form S-19).
High School Commercial Department Supplies (Form S-21).

These are all delivered once a term or year.

Form S-7 Board of Education — FIFTH GRADE SCHEDULE---First Distribution of One-Half Semester's Supplies — Rochester, N.Y.

No. of Pupils	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
SUPPLIES FOR BOOK RENTERS & INDIGENTS																								
Composition Books 25pp	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48
Mills #4 Gr. B. Fall	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
" F Fall Gr. A	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
" F Spring B & A	*1	*2	*3	*4	*5	*6	*7	*8	*9	*10	*11	*12	*13	*14	*15	*16	*17	*18	*19	*20	*21	*22	*23	*24
Paper-Ink	85	170	255	340	425	510	595	670	765	850	935	1020	1105	1190	1275	1360	1445	1530	1615	1700	1785	1870	1955	2040
" Pencil	40	80	120	160	200	240	280	320	360	400	440	480	520	560	600	640	680	720	760	800	840	880	920	960
" Penmanship	30	60	90	120	150	180	210	240	270	300	330	360	390	420	450	480	510	540	570	600	630	660	690	720
Pencil-Common	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Penholder	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Seneca Note-book	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
ART FOR BOOK RENTERS & INDIGENTS																								
Eraser-Soft	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Paint-Black	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
" Blue	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
" Red	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
" Yellow	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Pencil-Drawing #312	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Paper-Drawing	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200
GENERAL SUPPLIES																								
Chalk-Hard	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Fasteners #1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Bogus	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Manila Construction	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Tonal	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
White Cutting	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Skewer 4½"	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
GENERAL ART																								
Blotter 9 x 12 Green	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Bogus	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48
Coated #19-20-21-22-23	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Cover-Blue G Brown G Green F Alter.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Cover-Hvy. Wgt. #27 Parchment	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Manila Construction	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Manila " 1/4" Sqd.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Tonal Alternate 17	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48
White Cutting	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
White Cutting 3/16"6x9	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

FIG. 6 (S-7). STANDARD ALLOTMENT FORM.

Form 7-½ Feb. 1925 — BOARD OF EDUCATION — COST SCHEDULE — ROCHESTER, N. Y. — Grades 5 to 8 Inclusive
First Distribution One-Half Semester's Supplies

No. of Pupils	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
5th Grade																
Renters & Ind. .472	.94	1.42	1.89	2.36	2.83	3.30	3.78	4.25	4.72	5.19	5.66	6.13	6.61	7.08	7.55	
General .0058	.012	.017	.02	.029	.04	.04	.046	.05	.058	.06	.069	.075	.08	.087	.09	
Art .0419	.083	.125	.167	.209	.25	.29	.335	.377	.419	.46	.50	.544	.589	.628	.67	
*.0431	.086	.129	.17	.215	.258	.30	.34	.387	.43	.47	.517	.56	.60	.646	.569	
6th Grade																
Renters & Ind. .5086	1.02	1.53	2.03	2.54	3.05	3.56	4.07	4.57	5.09	5.59	6.10	6.61	7.12	7.63	8.13	
General .005	.010	.015	.021	.085	.030	.035	.040	.045	.050	.055	.06	.065	.07	.075	.08	
Art .194	.388	.58	.776	.97	1.16	1.36	1.55	1.75	1.94	2.13	2.33	2.52	2.72	2.91	3.10	
*.195	.39	.585	.78	.976	1.17	1.37	1.56	1.76	1.95	2.14	2.34	2.54	2.73	2.93	3.12	
7th Grade																
Indigents .455	.91	1.37	1.82	2.28	2.73	3.19	3.65	4.10	4.56	5.01	5.47	5.93	6.38	6.84	7.29	
General .0013	.0026	.0039	.005	.006	.007	.009	.010	.011	.01	.014	.015	.016	.018	.019	.02	
Art .032	.065	.097	.13	.16	.195	.227	.26	.29	.325	.357	.39	.42	.454	.487	.52	
8th Grade																
Indigents .455	.91	1.37	1.82	2.28	2.73	3.19	3.65	4.10	4.56	5.01	5.47	5.93	6.38	6.84	7.29	
General .0015	.003	.0045	.006	.007	.009	.01	.012	.013	.015	.016	.018	.019	.022	.023	.024	
Art .023	.046	.069	.09	.116	.139	.16	.185	.208	.23	.255	.278	.30	.32	.348	.37	

* Second Semester

FIG. 7 (S-7½). PRICES AND COST UNITS FOR FIGURING CLASS COSTS.

FORM S-4½
BOARD OF EDUCATION
ROCHESTER, N. Y.
BUREAU OF SUPPLIES

Date
School
Grade A or B
Room No.
Teacher's Name

FIFTH GRADE

Order-Charge Form
Second Distribution of One Semester's
Book Rental-General Art Supplies

Quan. per Pupil		No. of Renters and Indigents	Pkg. No. 1st Del.	Cost	Amt.
SUPPLIES FOR BOOK RENTERS & INDIGENTS					
25 Shts. Paper-Ink L. L.					
20 " " Pencil L. L.					
20 " " Permanship 9 x 12 Spec. Ruled					
1 " Pencil-Common					
ART SUPPLIES FOR RENTERS & INDIGENTS In Semi-Departmental Grades Art Teacher will fill out the following:					
1 " Paint-Blue					
1 " " Red					
1 " " Yellow					
50 Shts. Paper-Drawing		No. of Pupils			
GENERAL SUPPLIES					
1 Box Chalk-Ward					
1 " Fasteners #Spill #1					
1 Spt. Paper-Bogus 9 x 12					
1 " " Topal 9 x 12 Assorted 17 Colors Alternating					
1 " " White Cutting 9 x 12					
ART SUPPLIES					
2 Shts. Paper-Bogus 9 x 12					
1 " " Coated 9 x 12 Alternate #19-20-21-22-23-24-25					
1 " " Cover. Lgt. Mgt. Fl. Blue O Alternating Brown O Green P					
2 " " Topal 9 x 12-Assorted 17 Colors Alternating					
1 " " White Cutting 9 x 12					

FIG. 8 (S-4½). CHARGE AND ORDER FORM.

Janitors' Standardization (Form S-22). We are not quite so sure of our ground in the matter of the units allowed on janitors' supplies and equipment, as we are of the units allowed for the elementary and grammar schools for the reason that the system has been in operation such a short time. We are positive, however, that when they are reduced to a working basis, they will be just as efficient.

The distribution of janitors' supplies has been no small problem as we, of course, deal with a diversified group of men and women. Some exercise great care and use only what is actually necessary, while others do not exercise such care. Some of our charwomen think that it is necessary to put soap and powder into a pail until the suds overflows. In order to overcome or eliminate extravagance, we called a meeting of janitors from all various types of schools and discussed the situation from every angle. Various opinions were given as to the amount of janitors' supplies deemed necessary, but we could not get any intelligent information. I then called a meeting of the supervising janitor, the stockkeeper (who is an ex-supervisor janitor) and we arrived at what we deemed a liberal amount, taking into consideration all the conditions in the various types of schools as to number of grades, assembly halls, gymnasiums, plunges, number of pupils, and square feet floor space. We then made a schedule, listing schools of approximately the same number of rooms and floor space and standardized the amount of each item necessary to be used in these buildings.

It is not our desire to curtail the amount, but to give to all schools what they actually need, not what they think they need. We find that with the janitors, the same rule holds good as with the teachers. When they know they are pitted against other schools in the matter of economy they watch the leaks more carefully. If little leaks are stopped the sources of the "river of extravagance" are dried up. The word "economy" is a slogan in all of our administrative departments. President Coolidge has made "economy" a watchword and any one who knows anything about administrative departments either in the schools or in city, state, or federal departments knows there is good reason for the President's action. While we formerly kept a check on janitor's supplies it was not as efficient as the present method.

Pricing. We price up one of each form once a term or year and use it as a price list for each department. You can readily see that this makes a simple and accurate purchase reference sheet. We find that this system facilitates the summarizing of a year's consumption of supplies. Under our old system it was impossible to get accurate totals, but by arriving at a per pupil basis, we can capitulate the supplies with a greater degree of accuracy.

We feel that the system outlined and put into operation is working better than the per school or department money appropriation method as it centralizes the purchasing and handling of materials and does not necessitate a purchase and accounting system in each school. It does away with a tendency on the part of the various schools to use any appropriated surplus on hand at the end of the year to purchase supplies or equipment. In the main this procedure would be proper, but through the exercise of economy the balance should be carried over into the next year. Another commendable feature of our system is that the teachers, knowing the amount allotted to them per year, will do their best to keep within the allotted amount, and will take pride in their ability to do so, comparing their proficiency in the matter with that of other teachers. This spirit of friendly rivalry in keeping within the limits set can do no harm and will result in a considerable saving to the City of Rochester.

When it was agreed to adopt this system, we gave it a test in the four schools the principals of which were members of the committee. It was thought that these principals would be the ones most likely to give the matter their personal attention and interest. We have now reduced the plan to its present outline and expect as time goes on to gradually perfect it and to reach the heighth of efficiency. When new problems are introduced by a director or supervisor, they are reported to the purchasing department in writing so that the necessary supplies may be purchased and carried in the warehouse to meet the needs.

Like all commercial concerns each board of education has its individual problems to meet. It would seem with slight modifications the system we have outlined would cover most conditions.

In order to verify my statements I shall quote from reports received from principals who served on the committee.

From a departmental school (semi-foreign) of 63 rooms, having a registration of 1500 pupils—

"1. From the teacher's point of view, your system: (a) Provides each teacher with all her supplies to work with at the beginning of the term; (b) indicates just how much she is to have and is sure to get for the term's use so she can plan her work accordingly; (c) provides for an adequate amount, but not an oversupply so it teaches economy on teacher's part; (d) provides for the saving of time, as now it is not necessary to be constantly sending to the principal's office for supplies throughout the school year."

"2. From the principal's point of view the system: (a) Provides for the saving of time, i. e., no requisitions, no duplicate handling of supplies, and teachers; do not have to ask the office constantly for some supplies; (b) emphasizes the importance of economy all along the line; (c) eliminates the necessity of keeping at the office an accurate record of each teacher's allotment of supplies throughout the term; (d) eliminates the necessity of store room space within your building; (e) saves janitor's time as all supplies are delivered at one time to a teacher. While I believe I could give others, the above are the most important ones which I can think of at the present time."

From a grammar school (American) of thirty rooms, with a registration of 980 pupils—

"1. Prior to this plan each teacher had been required at the beginning of each semester to make a requisition for supplies needed. This took considerable time. This time is now saved. 2. Now the supplies are at hand when needed. 3. The teacher's time is saved by having her supplies delivered to her room. 4. Having all of her supplies at the beginning of each ten weeks, the teacher can plan her work more efficiently and can use the supplies more economically.

From the administrative side the plan has

(Continued on Page 139)

FORM S-22
Return to J. S. Mullan
301 Municipal Bldg.

BOARD OF EDUCATION
ROCHESTER, N. Y.
BUREAU OF SUPPLIES

Date
School No.
No. of Pupils
No. of Helpers
No. of Sq. Ft. Floor Space
No. of Sq. Ft. Terrace
No. of Floors
No. of Rooms
No. of Entrances

JANITOR-REQUISITION-CHARGE-FORM
STANDARDIZATION OF SUPPLIES AND EQUIPMENT FOR ONE YEAR WITH TWO DISTRIBUTIONS.

Janitor to fill in wt. on Hand	SUPPLIES	Don't enter in these Columns Amt to Del.	Pkg. No.	Cost	Amt.
Chamois	1 per Helper per Yr.				
Cheesecloth	2 Yds. per Room				
Hickson Windex	1 per Building				
Nails Common 6	1 Lb. on hand -as needed-				
" 8	Ditto				
" 10	Ditto				
Nails Finishing 6	Ditto				
" 8	Ditto				
" 10	Ditto				
Matches	1 94 per Bldg.				
Mop Yarns	4 per Helper				
Paper Towels	1 Bogus-3750-per M Pupils				
" Toilet	1a " 3000 " " "				
Powder Wopping	1 lb. Case M Sq. Ft. Fl. Sp.				
" Sand	" " " " "				
" Silex	3/4 " " " " " Bldg " "				
Sand for Walks	1 Bbl. for Bldg.				
Sawdust	" " "				
Screen 1 x 12	1 Gr. 20 bund				
Sponges	1 per room				
Soap Laundry	200 H.D. bars per 20 rooms				
" Soft	1 Bbl. per M Sq. Ft.				
" Toilet	50 3 oz. bars per 100 Pils.				
Washers Rubber	by Grade as needed				
Waste	1/4 lbs.				

JANITOR'S SIGNATURE
PRINCIPAL'S SIGNATURE

Don't enter in these Col Amt. to Del.	Pkg. no.	Cost	Amt.	Jan. to Fill in Amt. on hand.	EQUIPMENT.
				Ash Cans	40 cans per 50-30 rooms
				Bottles .7 Ink	1 per room
				Brooms Corn	1 per helper
				Brushes Counter	4 per room
				" Floor 13"-14"-15"-16"	Choice of 4 per Helper
				" Radiator	1 per floor
				" Scrub	6 per 20 rooms
				" Toilet	1 per floor
				" Window	2 per 20 rooms
				Coalhoist	1 per portable
				Crocks for paste	6 2 gal. per 20 rooms
				Dusters dustless	1 per Helper
				Dust Pans	1 per room
				Flags	1 Stars & 1 Bar. Flag
				Heaters	1 per floor
				Hose rubber	50 ft. per Building
				Hot plate	2 per building
				Funnels #4 #5	10 per room
				" Pitchers #4 #5	Ditto
				" Glasses #4 #5	Ditto
				" Tops #4 #5	Ditto
				Mats Rope	4 per entrance
				Mop Sticks	1 per Helper
				Mop Wringer	2 per 20 rooms
				Pails 8 qt.	1 per grade room
				" 14 "	1 per Helper
				Scoops Coal 5-6-7	Choice of 2 per Bldg.
				Shovels Snow	2 per building
				Stepladders 4'-6'-10'	1 per Helper
				"	1 per room

FIG. 10 (S-22). JANITOR'S STANDARD SUPPLIES SCHEDULE.

FORM S-5
BOARD OF EDUCATION.
ROCHESTER, N. Y.
BUREAU OF SUPPLIES

Date 4/30/26
School #8
Grade A or B
Room No. 210
Teacher's Name A. A. Doe

FIFTH GRADE

Order-Charge Form
First Distribution of One Semester's
Book Rental-General-Art Supplies.

Quantity per Pupil		No. of renters & Indigents.	Pkg. No. 1st Del.	Cost	Amt.
		20			
GENERAL SUPPLIES FOR RENTERS & INDIGENTS.					
4	Composition Books 25 pp	40			
1	Mills Writing Book #4 Gr. 2 Fall	20			
1	" Book F Fall Gr. A				
*1	" F Spring MA				
95 Shts. Paper	Ink L.L.	1900			
40 "	Pencil L.L.	800			
30 "	9x12 Penmanship Spec. Ruled	600			
1 "	Pencil Common	20			
1 "	Penholder	20			
1 "	Seneca Nats Book	20			
ART FOR BOOK RENTERS & INDIGENTS In Semi-Departmental Grades Art Teacher will fill out the following					
1 "	Eraser Soft	20			
1 Cake	Paint Black	20			
1 "	Blue	20			
1 "	Red	20			
1 "	Yellow	20			
1 "	Pencil Drawing #312	20			
50 Shts.	Paper Drawing 1,000				
		No. of Pupils 35			
GENERAL SUPPLIES					
1 Bx.	Chalk Ward Per Room	1			
1 "	Fasteners Nogill #1 Per Room	1			
1 Sht	Paper Bogus 9x12	35			
1 "	Manila Constr. 9x12	35			
1 "	Tonal 9x12 Altar. 17 Asst. Col.	35			
1 "	White Cutting 9x12	35			
1	Skewer 4" (for meals)	35			
GENERAL ART					
1 "	Blotter 9x12 Green	35			
2 Shts.	Paper Bogus 9x12 #23-24-25-	70			
1 "	Coated 9x12-Altar. #19-20-21-22-	35			
1 "	Cover Lgt. Mgt. Fl. Blue O. Brown Q. Green P. Altar.	35			
1 "	Cover Hvy. Set. #27 Poster	35			
1 "	Manila Constr. 9x12	35			
1 "	Manila Constr. 4" Sqd. 9x12	35			
2 "	Tonal 9x12 Altar. 17 Asst. Col.	70			
1 "	White Cutting	35			
1 "	White Knitting 5/16" 6 x 9	35			
*1 "	Manila Cutting 9x12 Hickory Tr. Pane. O				
*1 "	" " Chestnut Tr. Pane O				

* Second Semester.

FIG. 9 (S-5). ORDER FORM SENT TO WAREHOUSE.

Cutting Printing Costs in School Management

Arthur J. Peel

The ever timely subject of overhead expense, is one that has particular relation to the cost of administration and tuition in public school finance. The business of educating the youth of America is profitable when boys and girls are turned out into the world equipped to fulfil with satisfaction their responsibilities to organized society; that is the only kind of *profit* we can recognize in the school business. But that does not relieve us of the responsibility of running efficiently but as economically as possible, the machinery by which we educate young America; a dollar saved in the office of the superintendent of education, is a dollar more to spend on *instruction* (or it should be). I am not an advocate for parsimonious methods in the office of the school board or superintendent; I think we ought to recognize that good men must have good pay, that good work can more economically be turned out when we have modern equipment. But I have often found that overhead expense may be high in the *wrong direction*, and one source of waste in overhead expense, is found frequently in the printing bill. Now I am aware that very frequently this is not the school superintendent's funeral; he issues his requisitions, somebody else does the buying probably through the city department of printing and stationery; a charge is made against the superintendent's allotment for printing, or the appropriation allowed for this purpose, and that ends the story. On the other hand, there are many superintendents who do not have some say on the subject of printing, and there are still more who might judiciously exert an influence which would prove very healthy to town, county and state finance.

Too often we are content to leave to the printer the question of paper-stock, make-up, size, and how he shall run the forms which we are ordering. Now printers, as a rule, are fine fellows; I have a wholesome respect and admiration for printing craftsmen and their masters. When it comes to questions of typography, embellishments, and decorative design, I know many printers whose opinion I would take before my own; but there are some things that a printer does not know, especially when it comes to office forms, and this is the subject that I would like to submit to the reader at this time.

I have often been called in to consult with business executives, local, state and Federal government officials, on matters of reorganization in office practice and methods, and one of the first things I always tackle, is *forms*, their number, and purpose. I have yet to find an office, from the Post Office Department to a local school superintendent's office in the mountains of North Carolina, where it was not possible, no, very desirable—to reduce the number of forms in use. In one office I found sixty different forms in use, ranging in size from a 4 x 6 card, to an analysis sheet 17 x 40; between these two extremes were seventeen different sizes of forms in common use in the office, and operating departments. After studying their requirements we reduced the number to 25, and these were all covered by six standard sizes. Nobody missed the forms we "killed," and nobody seemed to see any reason why we needed more than six sizes.

Standardization of forms, then, is one way of economizing on printing costs. First, there is a saving on composition costs; of course, one way of reducing the number of forms was to make one form do where three, or even four, had served before, and this meant that it was necessary to incorporate into the new revised form, some, if not most of the features on the three forms it was supplanting; but in spite of this there was a very considerable reduction in the value of composition purchased from the printer. Then there was a saving in paper stock; in one case this amounted to three hundred per cent.

But this is nothing new to the progressive school executive. He knows that standardization is an idea that has gripped the consciousness of business and government officials. It applies not only to materials and equipment, it is being increasingly applied to office and school forms of all descriptions. But there is another step to take, and this is not so widely known or appreciated, even by the most progressive offices. The reason for this is that comparatively few people know the inner secrets of the printing house, nor how printing costs are figured and accumulated. This is not to be wondered at, seeing that there are even printers who do not understand the science of printing costs.

Having been connected with a large printing establishment in an executive capacity, I am in a position to submit information which ought to prove profitable to office executives and purchasing agents. The three most expensive items in any printing bill for straight printed matter such as forms, are paper stock, composition (including "make-ready"), and presswork. The cost of presswork is hypothetically governed by the speed of presses, or the run per hour. In order to illustrate this, let us suppose that we have a dozen different forms of varying sizes and different qualities and weights of paper; the printer would, of course, run these separately, that is, he would have to make seven "forms." He would use as many presses as he had available, if the sizes were suitable; or, he would run one form after another, on one press. Presswork is charged at so much per hour, and a printer's sold hour, is an all-inclusive machine hour rate, which may be anything from $3.50 to $6 according to the type of press used. Now let us assume that by standardizing on paper stock—and let me say just here, that ninety times out of a hundred there is no reason on earth why the stock used for one form should not be used for a dozen others—and by a careful and scientific method of sizing forms, we can print four *different* forms together on one sheet. It will readily be seen that we are going to do one thing, cut down the cost of presswork. But suppose we find a way by which the whole twelve forms can be printed at the same time? The saving will be that much greater, of course. This looks simple, perhaps, but here is the problem. Not every printer has the necessary equipment to handle the largest size sheets available, and to print twelve different forms together means a large sheet and a big press. We may have to do some shopping to find the right print shop, but the printer with the big press can do this, provided we do our part and standardize on stock and size. Now standardizing on size does not mean that every form must be the same size; we may still have seven, eight, nine, or more sizes, and yet they may all cut out of a sheet 57 x 38, for example, without any waste. I have before me, as I write, a form of material receipt; the size is 8⅜ by 5⅜, and it is used by storekeepers. Before this particular form was standardized in size, it cost $11.44 per thousand. After it was standardized, in common with a number of other forms used by the institution concerned, and printed at the same time as a number of other forms, that is, from the same sheet, the cost was $1.52 per thousand! This may seem like a fairy story; it is, however, an actual fact. The saving of $9.92 per thousand meant a total saving for the year of $872.96, as 88,000 of these forms were used in the year. Was it worth it?

Another problem that must be worked out satisfactorily before attempting this sort of economy, is that of quantities. It is very improbable that we shall need the same number of each form to be printed; it is necessary, therefore, to plan in such a manner as that we may get the approximate number required of each, from one run. In order to illustrate how this may ,be successfully accomplished with a little forethought, let me use another actual case, as an example. A Western college required a large supply of forms which were to be used in connection with a special course on cost accounting, prepared by the writer. The forms were given to me for standardization, after an estimate had been obtained from a local printer in the west. This estimate was, I think, about $3,000 for seven different forms, typed-ruled, a good grade of ledger paper, perforated where required, and four printed on two sides. The total number was about half a million. The separate quantities required were as follows:

Form A.....100,000	Form E..... 25,000
Form B.....100,000	Form F..... 25,000
Form C..... 25,000	Form G.....250,000
Form D..... 25,000	

Exactly 550,000 in all. Forms C, D, E, and F were to be printed on both sides. These forms were standardized so that they could all be printed out of a sheet 57 x 38, with the result that the presswork was estimated at only $50. The total estimate on this basis was just under $1,800, and this was not submitted by a cheap printer by any means, but by a house that has the reputation of being fairly high-priced, certainly above Printers' Board of Trade rates. Of course, the saving was not only on presswork; a considerable saving was on composition and make-ready. Electros were made, and these cost approximately $114. By using one grade of paper, some forms had a better grade of

(Concluded on Page 140.)

ETHICS FOR SCHOOL BOARD MEMBERS

Any school board member conducts himself in harmony with this Code of Ethics when he:

1. Abstains from soliciting any employe of the school to purchase any given commodity or service, such as real estate, insurance, or professional service.
2. Assumes no personal authority in administering the work of the schools unless he has been instructed to do so at a board meeting.
3. Avoids seeking to secure a school position for a member of his immediate family.
4. Refrains from public criticism of any particular teacher, but, if circumstances warrant, brings complaints to the attention of the proper supervisory officers.
5. Refrains from seeking special privileges for his children or employes.
6. Declines to offer a contract to a teacher who is known to be under contract with another school, without first determining the willingness of the teacher's employer to grant a release.
7. Abstains from seeking to perform the duties of the superintendent of schools or any other employe—such as selecting teachers, textbooks, promotion or placement of pupils.
8. Offers to teachers only such a contract as is just and equitable in form.
9. Endeavors honestly to contract with teachers on a salary basis that will cover living expenses for twelve months and a surplus for savings.
10. Stimulates and encourages the professional growth of teachers while in service by granting them permission to attend educational meetings without loss of pay, visiting days, and by encouraging them to attend summer school, to travel, and in other ways to improve their knowledge and skill in teaching.
11. Assists in securing a clear and definite statement and understanding of the duties to be performed by the Board of Education on the one hand and the duties of the supervisory officers and teachers on the other.

—MICHIGAN STATE TEACHERS' ASSOCIATION.

The Basis of Physical Comfort in Relation to Air Temperature

The Practical Application of Recent Scientific Data

Dr. E. Vernon Hill, Aerologist, Chicago

Very material progress has been made during the past few years in our understanding and appreciation of the fundamentals of health and comfort in relation to the air in which *we live.* Please note, I do not speak of the air we breathe, as research and experience are fast dispelling old illusions regarding "foul air" and "fresh air" and placing the emphasis on the physical properties of the air where it properly belongs rather than on certain vague chemical constituents. In other words, the temperature of the air, its moisture content and its motion, are the paramount factors that influence health and comfort. The "crowd poison" so dreaded a generation ago is no longer mentioned, and the terms "foul and fresh air" are fast passing into the limbo of things forgotten.

However, I do not wish to be understood as minimizing the importance of clean air, but it is the gross palpable dirt that we can see, feel and analyze, that must essentially be removed, rather than some vague, mysterious contamination supposed to be exhaled from human lungs.

The fundamental fact that must be thoroughly understood by those dealing with ventilation problems is that *we live in the air* as well as breathe it, and the fact that the air is our media, or environment, is more important from the standpoint of comfort than the fact that air is essential in our respiratory processes.

The human body may well be likened to a steam boiler which consumes coal, utilizing the heat liberated to warm the building in which it is located or to drive machinery, as the case may be. The human body consumes coal in the form of food and utilizes the energy to operate muscles, sinews, and nerves. In the end, this heat must be liberated to the air surrounding the body, and it is this liberation or dissipation of bodily heat that governs our sense of physical comfort.

Man is a homothermous animal, a term the physiologists use, meaning that the body temperature is constant irrespective of the temperature of the air or other media in which he happens to be. He travels to the Arctic zone where the temperature is 50° below zero and his body temperature remains at 98.6°, or he goes into tropical climates where the direct rays of the sun bring the temperature of the air up to 100° or more above zero, but his body temperature remains the same. This is due to the operation of a complex and ingenious system of heat control which keeps his bodily temperature constant under the wide extremes to which it is subjected.

Poikolythermous animals, like the frog, do not maintain a constant body temperature. Their temperature changes with the temperature of the media, air or water, in which they live. In man, all the heat generated in the body must be immediately dissipated. It cannot be stored up even for a short interval of time or the body temperature will rise and the phenomenon known as fever will be the result.

If the air surrounding the body is too warm, the heat regulating mechanism dilates the superficial veins and arteries throwing the blood to the surface where it can give off its heat more readily. It also stimulates the sweat glands to increased activity when their aid is needed.

If the air surrounding the body is too cool, the superficial vessels are contracted and the blood forced deeper, to the internal organs, thus retarding heat loss from the skin and maintaining the necessary heat loss balance.

In the former instance, the heat regulating mechanism is brought into play, possibly taxed, to maintain the normal dissipation in warm air, and we say we are "too warm." In cold air the same mechanism is again active, to prevent undue heat loss and we say we are "too cold."

As a matter of fact, the internal body temperature does not change and strictly speaking, we are not too warm in the first instant and not too cold in the second, except as our skin temperature changes by reason of the operation of the heat regulating mechanism. When the air surrounding the body is of the proper temperature and moisture content, the heat from the body is absorbed by the surrounding air without the exercise of the heat regulating mechanism, we are comfortable, and this is the *basic fundamental fact* of human comfort in relation to the air that surrounds us.

Bodily heat is dissipated in three ways. First, by radiation; second, by convection; and third, by evaporation. These are graphically represented in the accompanying illustration. Illustration No. 1.

Radiant heat is represented by straight lines, as it passes through the air from a warmer to a cooler body in straight lines, raising the temperature of the cooler body and correspondingly lowering the temperature of the warmer body *without affecting* the temperature of the air through which it passes. This explains why we can stand in front of a bon-fire out of doors on a zero day and absorb the heat with the keenest satisfaction and comfort, even though the air surrounding the body remains extremely cold.

Convected heat on the contrary requires contact. A large portion, probably the greatest portion of the body heat that is dissipated is by convection to the air that is in actual contact with the skin surfaces and the clothing. This is represented in the illustration by the wiggly-lines, representing the heated air as it flows upward around the body after being warmed by contact with the same. Most of our house heating is by convection.

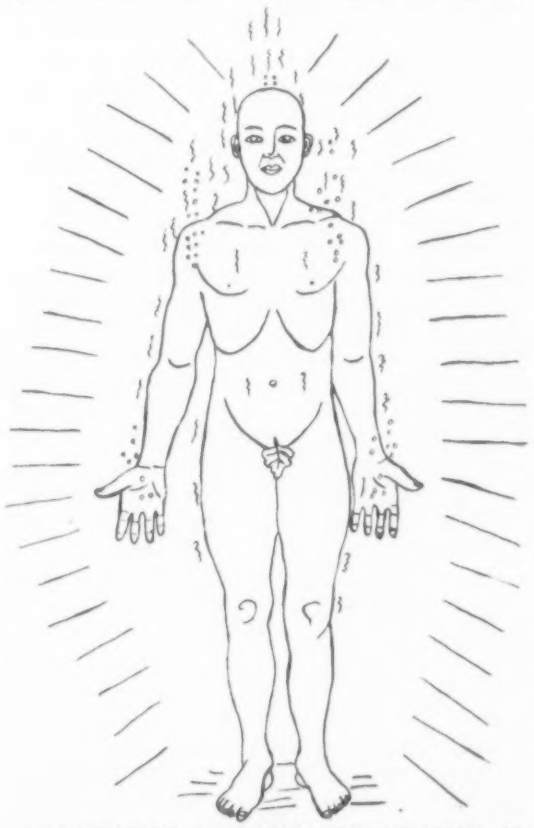

ILLUSTRATION 1. GRAPHIC ILLUSTRATION OF AVENUES OF HEAT LOSS FROM THE HUMAN BODY.

The third mode of heat dissipation is by evaporation. Perspiration on the skin surface has a distinct cooling effect, for the reason that changing the physical state of water from a liquid to a gas, required a certain amount of heat, "the latent heat of evaporation." As the perspiration is in contact with the body, its evaporation abstracts a certain amount of heat as it passes from the liquid to the gaseous state. This factor in bodily cooling is quite variable depending upon the temperature of the air and upon the amount of moisture it contains.

Heat loss by evaporation is shown on the illustration by the small globular or circular marks illustrating the vapor as it leaves the body surfaces.

As heat dissipation from the body occurs in the three ways mentioned, it is evident that there are three factors which should be concontrolled, if comfortable and healthful air conditions are to be maintained.

The first, is the temperature of the walls and other objects in a room, the size of the windows, etc., as these directly affect the *radiant heat* loss. These conditions are difficult to control, however, as the windows are primarily for lighting purposes and cannot be well modified to affect the radiant heat loss of the body. The wall temperature is fairly well taken care of by the heating of the building, and further than this it is not practical to go.

The second avenue of heat dissipation is by convection. This we can easily control by controlling the temperature of the air, and in fact this is the only method that has been attempted until very recently.

The third avenue of heat loss is by evaporation, and this is very largely governed by the moisture content of the air. The skin surface is always moist. In hot weather visible moisture is plainly apparent in the form of perspiration. Under comfortable air conditions, when we are not conscious of perspiring, the microscope will reveal minute droplets of moisture at the mouths of the sweat glands of the skin. Even in cold weather when the skin appears to be quite dry, moisture is constantly given off to the air, and the rate affects materially our feeling of warmth.

When the relative values of these three factors that influence heat absorption from the body, vary in their relations, the body must readjust itself to maintain a constant heat output. For example, if the temperature of the air goes up and heat loss by convection is thereby limited, the reduction must be made up by an increased heat loss by evaporation. If the air, on the other hand, is nearly saturated with moisture and heat loss by evaporation is reduced, the air temperature must be lowered and heat loss by convection increased in order that the balance be maintained.

Heat loss by radiation is very difficult to control. It is, however, fairly constant and can be safely ignored within certain limits if the other two are controlled. This, however, makes the latter two, namely, the temperature of the air and its moisture content, both of vital importance in our problem.

Customary practice, particularly in school buildings, is to utilize steam heat for warming the building with mechanical ventilation, and temperature regulation by means of thermo-

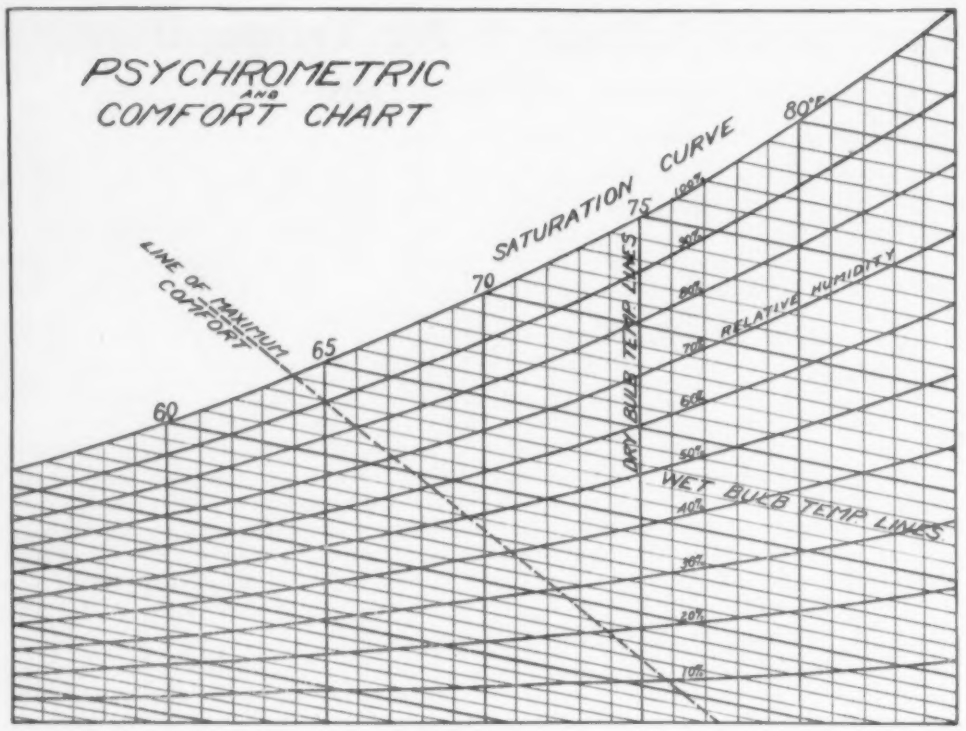

ILLUSTRATION 2.

stats to automatically control the temperature of the air.

Humidity control is frequently ignored or looked upon as a refinement, which is not justified by the expense involved in its installation and maintenance. In a great majority of cases, it is omitted entirely from the classrooms. We frequently have complaints from teachers and pupils that the classroom is cold where tests with certified thermometers show a temperature of 70°. If, however, the weather is cold and artificial humidification is *not* employed, the low moisture content of the air increases evaporation from the skin, and makes an actual temperature condition of the air that is as disagreeable as the condition of perhaps 5° below 70° with a normal moisture content.

On the other hand, a temperature of 70° with a high humidity makes a condition altogether too warm for comfort as evaporation from the skin is much retarded by a high humidity and a lower temperature is consequently necessary to maintain the heat loss balance.

This subject has been much discussed in scientific journals and by engineers and physiologists interested in the problem during the past ten years, until at the present time, it is quite generally recognized that both the temperature and the humidity of an occupied room must be controlled if comfortable air conditions are to be maintained. It was also conceded some years ago, that as the humidity was reduced, the temperature of the air (the dry bulb) must be increased to maintain proper conditions, or if the relative humidity was increased, the dry bulb temperature must be reduced, but just what the relationship was, and to what extent one should be increased when the other was reduced, was not known.

The writer, following the lead of Haldane, used the wet bulb temperature as a measure of comfort rather than the dry bulb, as the wet bulb measures the *total heat* of the air and much more closely indicates physical comfort. However, at low temperatures, the cooling effect of evaporation from the body becomes less pronounced and the humidity of the air, therefore, a less important factor. At higher temperatures, that is, as we approach the body temperature, evaporation of moisture from the skin becomes a very important factor and the dry bulb relatively less important.

Owing to the lack of definite information on the relative values of the dry bulb and the wet bulb temperature in their effect on physical comfort, a series of exhaustive tests and experiments were undertaken by the Research Staff of the American Society of Heating and Ventilating Engineers in their laboratory at the Bureau of Mines in Pittsburgh. Rooms were arranged with special apparatus so that any combination of temperature and humidity could be maintained. Members of the Research Staff, government employees in the building, and students from the Carnegie Institute of Technology were the subjects used in the experimental work. They were placed in these "Psychrometric Rooms" under known conditions of temperature and humidity, and their reactions and feelings of coolness or warmth were recorded.

Subjects were also placed in a room with a low temperature and a high humidity and then transferred immediately to an adjoining room with a high temperature and low humidity arranged to give the *same feelings* of warmth, coolness, or comfort.

In this way sufficient experimental data were secured to definitely determine the relationship between temperature and humidity in its bearing on comfort, and the equivalent temperature lines and comfort zone developed from this work. See Illustration 2.

In the accompanying chart, the upper curved line is known as the saturation curve and the figures, 60, 65, 70, etc., refer to degrees Fahrenheit. The vertical lines on the chart are the dry bulb temperature; that is, the temperature as shown by an ordinary thermometer. The curved lines below and practically parallel with the saturation curve are the humidity lines. Figures, 90%, 80%, 70%, etc., refer to the percentage of relative humidity. The oblique straight lines are the wet bulb lines and indicate the evaporation temperature of the air. The oblique dotted line is the maximum comfort line which will be referred to later.

This chart (without the comfort line) is known as a Psychrometric Chart and from it the data relating to air conditions can be obtained. For this purpose, a psychrometer is needed, which consists of two ordinary mercury thermometers fastened to a suitable frame on a handle which allows it to be rotated or whirled in the air, see Illustration 3. One of the mercury bulbs, the lower one, is covered with cloth which is dipped in clean water when the instrument is to be used. After the cloth covering of the wet bulb has been moistened, the instrument is whirled in the air. Evaporation of the moisture from the covering of the wet bulb abstracts heat from the mercury in the bulb, and this thermometer shows a lower temperature than the dry bulb thermometer. The difference is determined by the rate of evaporation. It can readily be seen that, if the instrument is used in humid air, that is in air that is saturated with moisture, no evaporation will take place from the wet bulb, and both thermometers will indicate the same temperature. If the air is dry, however, evaporation will be rapid from the wet bulb and it will register 5, 10, 15 or perhaps even 20 degrees lower than the dry bulb thermometer, depending upon the dryness of the air tested.

Let us take an example to illustrate its use with the psychrometric chart:

We will asume that a test is being made in a schoolroom on a cold winter day. The wet bulb of the psychrometer is moistened and the instrument is rotated in the air for perhaps two minutes, and the two thermometers are read. We will say the dry bulb registers 80° and the wet bulb 60°. If we now refer to the chart and locate 80 on the saturation curve and follow it straight down to its point of intersection with the oblique 60° line, we will find that the point of intersection is on the relative humidity curve of 30%. In other words, we have found, by this simple test, that the moisture content of the air is 30% of saturation, that is the air contains 30% of the amount of moisture it is possible for it to hold at this temperature.

We have endeavored to make it clear in the preceding paragraphs that a certain dry bulb temperature, say 70° may be too warm for comfort and health, or too cold, depending upon the moisture content of the air.

Starting with 70° at the saturation curve on the chart, the Research Staff found by many experiments that this was too warm for comfort, as the saturated air allowed no heat loss from the body by evaporation and all the heat must, therefore, be given off by convection and radiation.

As they followed this 70° line down the chart, a point was reached between the relative humidity curves of 40% and 50% where the wet bulb line of 57° intersects. This is the point of maximum comfort for this temperature and humidity. All above this point indicates conditions too warm for comfort. As we go below this point, the relative humidity decreases, evaporation from the body increases, and the conditions are too cool for comfort even though the temperature remains at 70°.

The maximum comfort line as shown on the chart passes through the saturation curve at 64°; this means that if the air is saturated with moisture, if the relative humidity is one hundred per cent, a temperature of 64° gives the maximum of comfort.

If we follow the comfort line diagonally down across the chart, we see that at a relative humidity of 90%, the desirable temperature is 65°, at 70% it is slightly above 67°, at 50% it is about 69½°, at 15% we must have a temperature of 75°. At 50% humidity a temperature of 75° in the room was exactly the same feeling of warmth as a temperature of 65° when the air is full of moisture.

This research work in determining the relationship between temperature and humidity as it affects human comfort and working out the maximum comfort line as shown on the chart, represents an advance in the science of heating and ventilation of far reaching importance, and the next logical step is to utilize this knowledge to the best advantage.

We have just shown how the Aerologists by means of a psychrometer determine the wet and dry bulb temperatures of the air in a given

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The Maintenance of School Buildings

John C. Almack, Stanford University, California

Importance of the old buildings. One of the most important duties of school administration is to see that the buildings are properly maintained. The investment is usually a large one. It is seldom the case that the annual outlay for new construction is more than a quarter of the amount already expended. The maintenance costs if adequate may themselves even approximate the outlays for new buildings. It is true that the construction of new buildings is a far more spectacular duty than the management or maintenance, but it is no more useful. Indeed, it is probably a less valuable service than that of doing the more humble and less showy task of keeping the school plant in a high state of efficiency.

By all means the administrator should not get the idea that when a new building is accepted his duty toward it is ended. It is really just beginning. A year or so of concentrated activity and the new structure is completed, but for forty years or more continuous service will have to be given it if it is to be kept usable. Even in a small city with only three or four buildings, there is an ever present problem of their care. Everyone admits that it is worth while to see that school building money is expended economically and wisely in the first place. It is just as true that every dollar expended should be as carefully conserved. In a recent survey it was shown that the building dollar depreciated in two-thirds the time in buildings uncared for that it did in schools that gave attention to maintenance. In other words, these districts received only two-thirds as much value from their investment.

The nature of the problem. Two general features of the problem may be distinguished. First is the financial aspect, which is concerned with methods of charging off depreciation, the raising of money for maintenance, and the disposal of worn-out and obsolete structures. The second has to do with the constructional angle—deciding upon what repairs and replacements to make, and deciding who is to make the repairs and when they are to be made. All of these come under the meaning of depreciation, and as a first step in their consideration, let us note what the leading causes of depreciation are.

Why Buildings Depreciate

The causes of depreciation. Five leading causes of building depreciation are usually enumerated. They are general in nature and apply to all kinds of structures—dwellings, hotels, factories, and schoolhouses. The degree to which each factor is responsible for depreciated value naturally differs with various types of construction and under different conditions of climate and use. Nevertheless, there are many elements in common as may be seen from the descriptions below. The causes are:

1. *Wear and tear.* This comprises deterioration through the effect of school use. From the moment a building is put into service, deterioration through wear and tear begins. The floor becomes worn, the walls are scratched and marred, the equipment is injured. It is observable that there is wide variation in the rate of this kind of depreciation. Some parts of the plant decline more in value at first and slow up as time passes. In other parts, the depreciation becomes gradually greater in effect as the end of the working life of the plant approaches. Deterioration of this kind can be compensated for by proper repairs and renewals.

2. *Physical decay or decrepitude.* This applies to unavoidable decay on account of the action of the elements. Even when a building is kept properly painted and repaired, there is a general deterioration that goes on constantly and cannot be wholly compensated for. Hence in time, the structure will reach such a stage that complete renewal is necessary. This decay goes on all the time whether the building is used or not. Insulated wire, boilers, roofs, foundations, and walls will waste away as rapidly when standing idle as when in use.

This kind of depreciation varies greatly in different climates and in different seasons. It is a factor always to be considered in vacation periods. The school board may feel that the school plant in September is the same as it was in June. This is not the case. With each season, the growing effect of physical decay may be noticed until finally the building must be scrapped.

3. *Deferred maintenance or neglect.* Deferred maintenance is the measure of the amount of money that must be expended to restore a building to normal working conditions. It is the difference between what a building would be worth if properly maintained and what it is worth. To a large degree it is an index to the efficiency of the school board and the building superintendent.

Of course it is clear that, even if repairs and replacements were made as needed, in time all the physical features of the plant would depreciate to a point where they cannot be put in condition that will exceed, say 75 per cent of their original value. This principle helps one to test when it is no longer justifiable to lay out more money on the rejuvenation of the plant.

4. *Inadequacy or supercession.* A school building may become uneconomical or useless because of increased school population and the consequent need of a larger structure. Closely allied to this feature is inaccessibility, due to a shift in the school population, the growing up of an industrial district about a school, or any other change in city structure.

5. *Obsolescence.* The fifth factor of depreciation is obsolescence. This is lessened value due to the introduction of new and better devices: for example, a new type of building, a new pedagogical theory, or a new kind of equipment. Obsolescence is very similar to inadequacy, and, in fact, the one term is often used to cover both meanings. Their differences are seen in that an inadequate building may still have value for school purposes, possibly a smaller student body or a different type of organization, whereas an obsolete building is practically worthless.

In simple depreciation, only two factors are commonly considered. They are (1) depreciation which includes wear and tear, decrepitude, and neglect; and (2) depreciation which includes inadequacy and obsolescence. The first may be judged by data or observation, while the second cannot be measured with any degree of accuracy. Whether a building is obsolescent or not is largely a matter of judgment. At present we have no device for measuring any of the factors of depreciation in a way that will enable us to determine how much money to set aside each year to cover maintenance costs.

Paying for Repairs

Special financial considerations. Perhaps the lack of thorough methods of measurement are in the main responsible for the neglect to make proper financial provisions for maintenance. The custom of setting aside funds to meet future obligations in the way of bonds for buildings is one which every school knows. But aside from this, allowance must also be made for repairs and renewals. In a small city, it is about as well to budget all the five factors—wear and tear, decrepitude, neglect, inadequacy, and obsolescence—under the one heading of depreciation. In a large school system, the factors should be budgeted separately. The expenditures made for repairs tend naturally to offset depreciation due to wear and tear. However, they do not balance completely with depreciation losses. One reason for this is found in the fact that the school plant does not consist of a vast number of independent units that wear out rapidly as in the case of a railroad, but the parts depreciate at greatly varying rates of speed.

As renewals and additions occupy a position very closely related to new construction, there is a tendency to charge them to capital outlays. There is also a tendency, rather objectionable in the case of renewals, to demand competitive bidding before the work can go forward. Both are very closely related to the repair function, and renewals should be dealt with in practically the same way. To illustrate the connection, consider a heating plant. Suppose the old one is considered inadequate and is turned in toward a new one costing $5,000. Assume also that the original cost of the old apparatus was $3,000, and that a $500 allowance is permitted. This means that the difference of $4,500 must be provided from public appropriations. Since a plant costing $5,000 has supplanted one costing $3,000, two thousand dollars' worth of value may be considered as having been added to the school plant. Moreover, a building otherwise useless is put into shape for service.

The rate of depreciation. If provisions are to be made for maintenance, it is very vital that the school authorities be able to predict quite accurately what the rate of depreciation will be. It is also important to have standards in order to judge the efficiency with which the maintenance department is performing its function. The maintenance department also needs to know what types of repair and renewal jobs are likely to occur. This means knowing at what rates roofs, floors, lighting and heating equipment, and the like, depreciate. Taking up some of these questions, let us consider first the rate of depreciation.

How Fast Do Buildings Depreciate?

In estimating depreciation rates, the school authorities have three points to consider. The first is the first cost of the total asset and of each unit. Second, an estimate must be made of the life of the total asset and likewise of each unit. Third, comes the estimate of residual or scrap value. Naturally these elements will be modified by the rate at which deterioration goes on, but the chief principles may be illustrated.

Suppose that a city build a schoolhouse for $300,000 and estimates that its life is sixty years. Suppose also that its scrap value at the end of the life period is estimated at $40,000. Then the total depreciation would be $240,000, to be distributed over the lifetime of the plant by some systematic method. Suppose that at the end of twenty years, $100,000 had been spent in repairs and renewals until the plant compared favorably in efficiency with new plants of the same type of construction. Certainly this fact of repairs will have to be considered in estimating its value. Yet on the other hand, the factors of inadequacy and obsolescence may come in to render such a plant almost valueless for school purposes at the end of the twenty-year period.

Yet it is possible to make fairly reliable estimates of the rate of depreciation from original cost to scrap value. Let us first consider two extremes within which depreciation will actually fall. If the school plant has been kept in

first class repair and has not become obsolete, its value may decrease very slowly for a long time, and actual depreciation become very rapid only near the end of its life. This describes the facts concerning the main structural parts of the school building fairly well. Or, as the other extreme, depreciation may take place very rapidly during the first part of its life, although its utility may not decline very greatly. This is true of much school building equipment.

Actual loss of utility may follow the same curve—very rapid at first, with lessened decline after the first five or six years. The varying degrees between these extremes also may be found. From an examination of the facts of deterioration a basis for figuring rates and of estimating repairs is given. Three leading methods have been employed. They are:

1. The percentage of original cost plan.
2. The percentage of diminishing value plan.
3. The sinking fund plan.

Under the percentage of original cost plan, the total depreciation—the difference between the cost and the scrap value—is divided by the estimated productive life of the plant, and an amount equal to the quotient is set aside for repairs and renewals each year. To illustrate: Assume a plant whose original cost was $50,000, and estimated scrap value of $2,000, and an estimated life of sixteen years. We have $\frac{\$50,000 - \$2,000}{16} = \$3,000$, the amount to be raised for repairs and renewals annually. This is called the straight line method of calculating depreciation.

Two Other Methods of Depreciation

Under the second method—the percentage of diminishing value plan—a fixed percentage is taken from the value as depreciated the preceding year and not from the original cost. This method enforces a heavier reduction in value during the early life of the asset, and is particularly applicable to the facts concerning building equipment. To illustrate the method: Assume a building costing $50,000 with an estimated loss in value of five per cent a year. The depreciation the first year would be five per cent of $50,000 or $2,500; and the remaining value would be $50,000 less $2,500 or $47,500. For the second year, one would take five per cent of $47,500 or $2,375; the third year five per cent of $43,125, and so on.

The sinking fund method, which is the third mentioned, requires that a fixed sum of money be set aside every year out of the school funds. The amounts vary, being smaller at first and gradually increasing. Each increment is set aside together with its interest compounded at regular intervals. To illustrate: Suppose we have a building which cost $50,000, and whose period of service is estimated at 25 years. We set aside each year a sum which will equal at the end of 25 years one twenty-fifth of the total when its compound interest is added. Thus the question the first year is, "What principal at a given rate compounded will equal $2,000 in 25 years? In twenty-four years? In twenty-three years?" and so on. Although less is allowed for depreciation in the earlier years by this plan than by any other, it does not differ in principle from the straight line method. In both, a fixed sum is collected every year.

Very few figures on school building depreciation are available. It seems to be a fairly well established practice to set aside annually from two to two and one-half per cent of original building costs to make repairs and replacements. If buildings have been neglected for several years, such an allowance will ordinarily prove insufficient to bring them up to standard. Something, too, will depend upon how intensive the use of the structure is. It is reasonable to be expected that schoolhouses open both day and evening, housing two sections, or accommodating abnormally large enrollments, will depreciate faster than buildings doing only one type of service. Consideration should be given to this point when preparing the budget.

Maintenance Allowances

Maintenance allowances are necessarily in addition to any sums appropriated for the replacement of assets when they are worn out. Although there are no accepted standards covering schoolhouse depreciation, it is possible to adapt the standard rates, adopted by the National Manufacturers' Association, to schoolhouse situations. At least such standards are useful as a guide. These standards, given below, apply to factory building and equipment. The first column gives the rates by the straight line method of computation; the second by the percentage of diminishing values method.

Building and accessories	Straight line	Diminishing values
Reinforced steel, concrete, and tile	2%	3%
Brick and steel, concrete floors	2.5	4
Brick, steel, and wood	3	5
Brick and wood	3	5
Concrete block, wood roof and floors	3.5	8
All wood (well built, life 20 years)	4.5	10
All wood (cheaply built, life 20 years)	5	12
Heating and ventilating equipment (20 years)	4	7.5
Water, sewer, and sanitary system	4	7.5

A few of the school surveys give facts bearing upon the life of the school building. In an Arizona study, 114 city buildings were evaluated, with the following conclusions concerning future life:

Periods	Age	Future life
Less than five years	51.1%	1.8%
Six to ten years	23.2	16.3
Eleven to fifteen years	10.5	16.3
Sixteen to twenty years	5.8	27.3
Twenty-one to twenty-five years	4.6	7.2
Twenty-five and over	4.8	30.1

The median age of the schoolhouses is seen to be seven years; the median expectancy twenty years. This signifies a total service period of 27 years for buildings partially fireproof. Leaving out of consideration the factor of obsolescence, a rough estimate of the life of school buildings of varying grades of construction is as follows:

	Well cared for	Poorly cared for
1. Excellent grade of materials and workmanship	50 years	40 years
2. Average grade of materials and workmanship	30 years	25 years
3. Inferior grade of materials and workmanship	20 years	15 years

From the same survey, it is possible to get some idea of the order in which building elements depreciate. Taking ten items only, it is seen that outside paint is first to stand in need of attention; the roof, second; and so on down to stairways, which are tenth. For example:

Items	Rank order in which repairs and replacements are required
Outside paint	1
Roof	2
Entrances	3
Outside doors	4
Foundations	5
Corridor walls	6
Windows—exterior	7
Corridor floors	8
Siding	9
Stairways	10

The twenty-fourth annual report of the superintendent of schools of New York City also gives some interesting facts concerning items of depreciation. It shows:

What Wears Out?

In 1921 there were 56 stairways renovated; 86 pupils' toilet enclosures and fixtures overhauled, renovated, and painted; 38 buildings reroofed; 1,670 classrooms cleaned, painted, and varnished; as well as 20,436 windows repaired and painted.

During the present year (1922) the repair, painting, and renovation will include 65 stairways; 44 pupils' toilets; 4,287 classrooms; 6,804 windows; the remodeling of 22 pupils' toilets; ten new water supply installations; 3,100 drinking fountain guards; and eighteen additions to the present electric lighting system.

Data of the type cited are important for several reasons. They show what items suffer from wear and tear, decrepitude, and neglect. If one had these facts for his whole school plant for several years, he could check needed improvements more intelligently. The information would also be important in planning the construction of new buildings, since more care could be taken to select materials, provide construction, and improve workmanship with the object of lengthening the life of the elements most subject to early decay. It is not to be expected that at the present stage of development a school building can be put up so (like the wonderful one-horse shay) one part will last as long as every other part; but close checking and watchful supervision of construction will help to approach this ideal—perhaps as far as it is desirable.

Making repairs. Two methods of inspection and checking may be employed in order to keep the maintenance department aware of repair and renewal needs. The first is by means of an annual or semi-annual examination of a thorough kind, made by an assistant superintendent of schools, by the building superintendent, or by other competent authority. The second is the regular and frequent type of inspection performed by the janitors and principals. Only thus can work be done properly and promptly.

It is a matter of first importance that repairs be taken care of as soon as they are needed. The old adage, "a stitch in time saves nine," is particularly applicable to school building repairs. A small leak in a roof, a piece of loose siding, a broken stair tread—these cannot be suffered to go neglected. It is to be expected, therefore, that the janitors will be capable of making many minor repairs and replacements, and that they will have tools and supplies to enable them to do so. It is a bad educational and financial policy to let things go at sixes and sevens about a schoolhouse. Each dollar invested depreciates in two-thirds the time, and moreover, ramshackle structures are an invitation to vandalism.

There will be repairs and replacements of such character as to require more time and skill than the janitors can give. As a result, some permanent policy covering such jobs is indispensable. There are two general methods found in practice. They are (1) the contract method, and (2) the straight time method. Either or both may be used satisfactorily.

Handling Repairs

The contract method. The contract method has reference to work done by individuals and companies outside of the school organization. In many states, the law is such that all work costing more than a thousand dollars must be advertised and let to the lowest bidder. In such circumstances, the procedure is the same as that which governs new construction.

Or again, the superintendent of buildings and grounds may make an agreement with plumbers, carpenters, and painters to do repair work on the school plant when it is called for. The principals and janitors report needed work to the building superintendent. He in turn issues an order to one of the individuals or firms with whom he has contracted, and the work is done. When completed, it is inspected by the superintendent or one of his assistants (perhaps the janitor) and payment is made. No one is permitted to give orders for work except the maintenance department, and every job must be checked through this office. Usually

collections cannot be made except after actual inspection and acceptance. It is quite common to contract on the cost-plus plan, charges ranging from ten to fifteen per cent being made.

There are several advantages in the contract method. Delays are generally avoided, since the contractor is under agreement to attend to the work promptly. He can afford to give special attention to the school, since he has a large amount of work to care for, and can count upon it. The maintenance superintendent is freed from having to look up workmen every time a repair job makes its appearance. He can select competent firms and hold them responsible for results. He is relieved from looking after applications for employment and has but little supervising to do. Payments may be made at regular intervals, perhaps every month. There is doubtless some economy in the plan. This is seen more clearly in types of jobs where no permanent workers are ordinarily kept on the repair force, such as in the plumbing, steam fitting, and electrical services. Laying linoleum, erecting fire escapes, brick work, and painting are other good examples.

The straight time method. Under the straight time method a repair force is kept employed throughout the year. The workmen are paid for all their time, either at a yearly or a monthly rate, and are under the direction of the maintenance superintendent who may be attached to the business office. One of the workmen may be designated foreman. He checks the jobs on completion, keeps a record of time spent and materials used, and may have complete charge of tools and materials. In the smaller cities the superintendent of maintenance may also act as foreman. There is no relation between the size of the city and the method which should be adopted. Any city system that has enough repair, replacement, and fill-in jobs to keep one man busy can have a permanent force. A steady jack-of-all trades is a very good type of individual to employ under such circumstances. The number of workers in two cities of around 300,000 is given below. Both cities hire some extra men as needed:

First City	Second City
Three carpenters	Three carpenters
Plumber and helper	Plumber and steam fitter
Steam fitter and helper	Two cabinet makers and shop men
Electrician and helper	Painter
Landscape architect	

Disadvantages of Time Repairs

With a large permanent force, it is regarded as advisable to supply some fill-in work. Some schools keep the repair gangs busy building school furniture and equipment for new buildings when repair work is slack. They claim they can save anywhere from 20 to 25 per cent by this method. On the other hand, there is a good deal of evidence that such equipment is inferior in type, finish, and durability to the work of commercial establishments, and it is very doubtful if such claims of economy are justified. The wisest plan seems to be to keep the permanent force down as small as possible and hire extra help in times of emergency. The fill-in tasks may be made up of repair and replacement jobs which do not need to be rushed, and thus the men kept busy all the time. The difficulty of keeping the force steadily employed is looked upon as the main weakness of the straight time plan. Its great advantage is that the repair work is cared for continuously.

The following may be taken as the typical practice in ordering repairs: The principals or janitors notify the maintenance superintendent of the needs. The latter makes a record on a work order blank. The original is kept by the superintendent, and a duplicate sent to the foreman who sees that the work is done and reports complete details—nature of the repairs, time spent on the job, materials used, and total costs. The dates on which the order was received and the work completed and inspected are clearly set forth. In some cities the order blanks are of two kinds—one for emergency jobs and one for jobs that may be delayed without serious loss. If the jobs are complex and of considerable importance, an inspection and estimate before beginning work are very necessary. If this is done, a preliminary report should be made out and attached to the original order sheet. All the data should be filed by buildings.

Very thorough and complete inspections should be made of each building shortly before the opening of the summer vacation, and perhaps another before the winter holidays. All preliminary estimates, special orders, and alteration plans should be in the hands of the superintendent of maintenance in time to enable him to order materials, hire any additional labor, and organize the repair gangs so that intensive work may start as soon as vacation opens. A good deal of supplementary labor can be recruited from the janitorial force not needed to look after grounds. This not only gives the men employment, but provides good training for the minor repair work of the year. A light motor truck is indispensable to transport men and materials to the buildings. Accurate and complete cost records should be kept of all summer jobs as well as of jobs looked after during the regular school year.

When Abandon Schoolhouses?

Abandoning a building. It is almost always a debatable question whether a building should be abandoned or made to serve a year or two longer. There are so many qualifying factors that one cannot speak absolutely on the question. Score card results must be accepted as only an index to conditions and not relied upon absolutely. Sometimes the choice is between using a building scoring less than 500 points and having no school at all. Off-hand, one is inclined to say that all necessary repairs and replacements should be made, or the structure left vacant. This is a very sound rule, especially if the health or safety of the children is threatened. Repairs and renewals should, therefore, be made promptly, even if costs seem unduly high, or the schoolhouse should be closed. If, however, it is a question of relative comfort, convenience, or efficiency, the ability of the district to pay for new buildings may be the main consideration.

Probably educational utility should be the determining factor. The factors of inadequacy and obsolescence are mainly involved. The final decision on the points have to be made

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F. B. HAAS,
Superintendent of Public Instruction, Harrisburg, Pa.

NEW PENNSYLVANIA SUPERINTENDENT OF INSTRUCTION

Mr. Francis B. Haas, formerly deputy superintendent, has been appointed by Governor Pinchot as state superintendent of public instruction for Pennsylvania. He succeeds the late Dr. J. George Becht, whose death occurred in April last.

Mr. Haas, who had been deputy superintendent since 1924, had with James N. Rule, conducted the affairs of the department of education since the illness of Dr. Becht interfered with his work last fall. His appointment as superintendent was made because, in the opinion of the governor, he was capable of doing more for the school children of the state than any other man in the state. Trained as an educator, he has had a distinguished career in his chosen profession. In addition, he has shown qualities of the first order as a business manager and as an executive.

His contact with the legislature during the last session made it clear that he is qualified to carry on that important portion of the work of the department which deals with legislation and appropriations. His past contact with local school officials is a guarantee that he understands them and they understand him. There should be a minimum of friction, since Dr. Haas believes in the decentralization of school work, and in local initiative and home rule.

Mr. Haas was born in Philadelphia and was educated in the public schools of that city. After completing the course in the Central high school in 1904, he attended the Philadelphia School of Pedagogy, graduating in 1906. Later he taught at Girard College, and in the public schools of Philadelphia, becoming principal of the Breck school in 1916, and of the Benson school in 1918. He was given the undergraduate degree by Temple University in 1913, and the master of arts degree by the University of Pennsylvania in 1922.

Mr. Haas entered the state department of public instruction in 1920 as assistant director of the teacher bureau, bringing with him his rich experience as teacher and principal in elementary schools, professor and demonstrator in the Philadelphia School of Pedagogy, and leader and promoter of all types of educational activities. He assisted in the formulation of an improved teacher standard which becomes effective in 1927, and showed conspicuous capacity for administrative problems, which led to his promotion to the directorship of the administrative bureau.

From the beginning, Mr. Haas displayed in his direction of the bureau a special aptitude for administrative duties. In the reorganization of the department and its adjustment to meet the retrenchment policy of the new administration, he performed a service which brought commendation from the administrative officers. In recognition of the efficient manner in which he organized and conducted the fiscal and business affairs of the department, he was made deputy superintendent in 1924.

Shortly after this promotion, Dr. Brecht became seriously ill and the work of the superintendent's office fell to the two deputies, who conducted it in a manner that won the admiration of the schoolmen of the state. All types of professional, administrative and executive problems were met and solved.

That Mr. Haas possessed genius for executive and administrative leadership was shown in his powerful and convincing defense of the educational budget before the senate committee when the school system of the state was in jeopardy through a threatened reduction of the appropriation. In that effort he revealed the qualities and requisites of a strong state superintendent.

The Work of the School Janitor

II. The Daily Cleaning of Floors: Equipment.

Charles E. Reeves, Ph.D.

The equipment used for cleaning floors, in-so-far as the present study is concerned, resolves itself into a comparison of the efficiency of results obtained and the time required by use of the central vacuum cleaner with the hair floor brush. No portable vacuum cleaners were discovered in use in schools studied, and there are reasons for believing they would not be as satisfactory as the central vacuum cleaning system for cleaning such large floor areas. Likewise, no brooms were discovered in use in any of the schools visited and common opinion confirms the belief that they are far less effective than the hair floor brush.

Four of the schools studied had central vacuum cleaning systems; in all others the hair floor brush was used. The latter was used, also, in two of the schools having central vacuum cleaning systems which were installed more than twelve years ago. The two schools in which the vacuum was used for cleaning all floors had their vacuums installed within the last three years. The older installations had disadvantages, as we shall later see, that made their use in cleaning floors impracticable.

Effectiveness of Results Due to Equipment: Effectiveness of results was determined first, by a system of grading as was described in the first article of the present series, and second, by objectively weighing the amount of dirt removed, under controlled conditions, by the use of different kinds of equipment. The plan was to assign grades on a five-point basis considering (1) the amount of space not cleaned, (2) the loose dirt remaining in out-of-the-way places, (3) the dust stirred up, (4) the dust raised from stamping on the floor.

Anyone who has noted the wide variations in results obtained by janitors would scarcely hesitate to assign grades, considering only general appearance. However, it was believed that if the elements of good cleaning were each considered separately, more accurate grades could be assigned. At any rate attention to a number of elements, each indicative of the quality of results obtained, ought to give more valid results than a grade assigned on general appearance alone. A form was, therefore, utilized upon which a full description of the results was entered and grades were assigned immediately and in conformance with the criteria set forth above.

The average grade for the cleaning of 70 classrooms by five janitors using the central vacuum cleaner was 1.4, or between "good" and "excellent." The average grade for the cleaning of 128 classrooms by sixteen janitors, using the hair floor brush was 2.9 or slightly better than "fair."

Excellent results by means of the brush, under best conditions, are not impossible to secure. Those observed ranged from "very poor" to "excellent," while work accomplished by means of the vacuum all graded as "excellent" or "good." The grades merely indicate that, in practice, janitors tend to accomplish better results with the central vacuum cleaner than with the hair floor brush.

To eliminate the personal factor due to the above comparison of results accomplished by different janitors using the two kinds of apparatus, the work of two janitors using both the vacuum and the brush was compared. The work was performed on unoiled floors. In one case eleven observations were made; in the other, sixteen. The work of the vacuum graded 1 or "excellent," while that of the brush graded 4 or "poor."

The vacuum cleaner accomplishes better results on every point of the criteria previously set up:

1. The vacuum cleaner covers all space better than the brush. It can be used to better advantage around desk legs, under radiators, and under teachers' desks.
2. No marks of the apparatus are left where the vacuum is used, while marks will be left where the brush strikes the floor unless great care is exercised.
3. The vacuum cleaner does not stir up the dust to float in the air as does a brush on an unoiled or poorly oiled floor.
4. If one stamps on a cleaned floor less dust will arise from a floor cleaned by means of a vacuum than from one cleaned by means of a floor brush. The vacuum draws the dirt from any cracks in the floor which is true to a lesser degree when a brush is used.

If a vacuum cleaner will take more dirt from around desk legs, under radiators and teachers' desks; from cracks under baseboards and in the floor; if it does not stir up dust into the air and does not leave marks of the apparatus; then the amount of dirt obtained by use of a vacuum cleaner should be greater than that secured by means of a brush. Experiments, under controlled conditions, showed this to be the case.

Two experiments were conducted to determine which apparatus would remove the most dirt. The first was performed by Janitor C using each method for four rooms, all eight being located on the same floor, both tests being made on the same day, 24 hours having elapsed since the previous cleaning. The rooms were used by the seventh and eighth grades, departmentalized.

The vacuum equipment was of the newer type and the 18-inch brush used was of good quality and nearly new. The vacuum tank was thoroughly cleaned before the experiment was begun and the dirt weighed immediately after the experiment. There were 127 seats in the four rooms cleaned by vacuum and 155 seats in those cleaned by brush, indicating that the latter may have had slightly more use than the former, which would increase the amount of dirt in the rooms cleaned by brush. The former was equipped with movable chair desks, the latter with single pedestal combination desks and seats, which again would throw the advantage, if any, to the brush, since it is more difficult to clean under chair desks. The area of the four rooms cleaned by vacuum was 2,996 square feet and of those cleaned by brush, 2,763 square feet, which, had the rooms had the same amount of use, might have operated to increase the amount of dirt obtained by the vacuum. However, these differences in use, equipment and size are small and would tend to counterbalance each other. The results were as follows:[1]

Amount of dirt removed by vacuum from four rooms—3 pounds, 0 ounces.

Amount of dirt demoved by brush from four rooms—1 pound, 12 ounces.

The vacuum, therefore, removed 171 per cent as much dirt as the brush.

Since there was slightly more space cleaned in the four rooms cleaned by means of the vacuum, the results for this method may be corrected to place the data for the two sets of rooms on an equal floor area basis. Deducting 8½ per cent of the amount of dirt obtained by the vacuum, we have the following comparison:

Amount of dirt (corrected) obtained from four rooms by means of the vacuum cleaner—2 pounds, 12 ounces.

Amount of dirt obtained from four rooms by means of the hair floor brush—1 pound, 12 ounces.

The central vacuum cleaner, therefore, removed 157 per cent as much dirt as the hair floor brush.

A second experiment was conducted, similar to the first, by Janitor S. In this case location of rooms, grades occupying them, (fifth and sixth) previous cleaning, kinds of furniture (single pedestal combination desks and seats) were all the same for both methods. The same apparatus and general procedure was followed as in the previous experiment. The four rooms in each case contained an equal floor area, 2,796 square feet. The rooms were occupied by one set of pupils throughout the day. The total attendance in each set of rooms as shown by the principal's report for the previous month, was approximately equal. The results were as follows:

Amount of dirt removed by vacuum from four rooms—3 pounds, 8 ounces.

Amount of dirt removed by brush from four rooms—2 pounds, 2 ounces.

The vacuum, therefore, removed 165 per cent as much dirt as the brush.

Hence, we may summarize the following as evidence that the work of the vacuum cleaner is more efficient than that of the brush:

Observations, average grade, vacuum 1.4, brush, 2.9.

Tests on unoiled floors, average grade, vacuum, 1.0, brush, 4.0.

First experiment (corrected for area) vacuum removed 157 per cent as much dirt as the brush.

Second experiment, vacuum removed 165 per cent as much dirt as the brush.

Conclusion: The *central vacuum cleaning system* is a more efficient means of cleaning classroom floors than the hair floor brush.

The dirt not removed by the brush doubtless remains in cracks of the floor; under radiators, teachers' desks or around desk legs; floating in the air; and in brush marks on the floor; all of which was indicated in the assignment of quality grades.

Economy of Time: The result for time required to clean floor by means of the central vacuum cleaner and the hair floor brush seem slightly to favor the former, though they are not so conclusive as those for efficiency of results.

Since classrooms varied somewhat in size, the results were, for convenience, reduced, in each case, to equivalent time required to clean 700 square feet of floor area, allowing 660 square feet for the area of the classroom floor and 40 square feet for the area of the cloakroom floor.

The time required by vacuum to clean 70 classrooms, thus reduced, the work being performed by five different janitors, varied from 3½ minutes to 12½ minutes, while the time required to clean 128 classrooms with a brush, sixteen different janitors performing the work, varied from 3½ minutes to 14½ minutes. The median time required by use of the vacuum was 7 minutes; by the brush, 8 minutes, 47 seconds. This indicates that, in practice, use of the vacuum cleaner is probably more rapid than use of the brush.

However, under controlled conditions less difference in time was obtained. In tests made by Janitors C and S the average time required by Janitor C when using the vacuum was 7 minutes, 16 seconds; when using the brush, 7 minutes, 23 seconds. The average time re-

(Continued on Page 135)

[1]For complete data regarding this and the following experiment see Reeves, Charles E., An Analysis of Janitor Service in Elementary Schools, Teachers' College Contributions to Education, No. 167, Columbia University, New York, 1925.

Interviewing the Prospective Teacher

R. W. Tarbell, Milwaukee, Wis.

One of the major problems of school administrators centers around the selection and appointment of teachers. It is a duty that is usually carried on quietly, without much show or formality. Obviously much of the procedure is confidential. Teachers come and go, and the public may not realize that someone must give considerable attention to the annual selections.

Statistics show that a very large turnover exists in the teaching force. The average term of service of teachers is about four years. This seems very low, but many teachers leave the profession at the end of the first or second year. Taking four years as the average teaching period, there would be a one hundred per cent turnover every four years, or twenty-five per cent each year. The problem, then, resolves itself into a matter of meeting a turnover of approximately one-quarter of the teaching force each year. New teachers must be supplied to take their places. Somebody in authority provides for the shortage. It may be board members, superintendent, or principal, but there is this very important matter to take care of as an annual problem.

It is not the purpose of this article to discuss who shall do the selecting. That is a problem in itself. Some administrative officer is charged with the responsibility. Local custom or rules of procedure have usually grown up in the system to determine who shall act in this capacity.

There will be certain routine matters to attend to, preliminary to the actual choosing of new instructors. The needs of the next year, with its possible expansions, normal turnover, etc., should be studied, to find how many teachers will be needed and the qualifications each should have. Following this will come the various steps of advertising, scanning old lists of applicants, mailing application blanks, and attending to the office details incident to the real problem of teacher selection. But these matters are largely clerical. They do not require more than an average amount of training. The real work consists of judging the qualifications of an applicant and determining his or her fitness for the school position.

With this introduction to the problem, let us now discuss a method that can be followed by superintendents or other school executives, as they set out to secure new teachers. The question will be developed under two heads. The first will consider the employing party, as he goes out to visit a prospective teacher at work. The second will consider the matters that may arise, as the applicant calls on the employer for an interview. The purpose throughout will be to show how the job may be done. It will be an attempt to set up a plan of procedure that may be followed, with modifications, to suit local conditions.

The Plan

Let us journey with the superintendent, or the board committee, to a neighboring school system, for the purpose of selecting a new teacher. We will play the role of observer, noting each move, question, and inspection made by those with us. In that way we shall be able to determine some of the things that should be done on such an occasion. There will be five divisions or steps in our scouting trip.

I. Observing the Teacher's Work

1. *The Lesson.* There are two fundamental things which are to be observed concerning the lesson.

(a) Preparation. No teacher can do a good piece of work in the classroom, unless there has been a sufficient preparation beforehand. Even so simple a matter as long division may be poorly prepared. The teacher understands long

division, of course, but may be so sure of the subject that the preparation will be slighted. This will likely reveal itself in a hesitancy in the teaching process. The preparation should be so thorough that the teacher will display a complete mastery of the subject matter. This applies to any part of the curriculum. Our companions who are observing the work decide on a rating for the teacher's preparation.

(b) Quality of Teaching. A great many things may be included under this heading. It reaches out in a number of directions and depends much upon preparation, as well as other items, which will be discussed presently. Granted that the lesson is well prepared, just what is meant by quality of teaching? It is scarcely to be found under any of these other headings, although they are factors in its rating. Quality seems to convey the idea of degree of ability to impart knowledge. If the questioning, the directing, the discussion, etc., are carried on in such a way that the maximum amount of subject matter is assimilated by the pupils in the shortest time, we have one factor in favor of the teacher. Manifestly the teaching must be such that the class can understand it. The inspectors will not be mistaken by a great display of activity on the part of the teacher and a meager reaction from the class. The class should be actively engaged in the learning process. As indicated already, it is not an easy matter to rate the quality of teaching. The observer will need all his knowledge of the science of pedagogy and wide experience in observation, to make a proper estimate of this phase of the teacher's work.

2. *Management.* The second main factor to be considered is management. There are several items to be observed under this heading, all of which will assist in judging the teacher's ability. The word connotes a number of ideas, which have to do with the conditions the instructor is able to set up in the classroom to procure effective teaching.

(a) Attitude of Teacher toward Pupils. Does the teacher maintain an attitude of severity toward the class?

Is there a feeling in the room that the group is present to submit and obey, while the one in authority is stationed at the desk to rule?

Or, is there an atmosphere of graciousness emanating from the teacher?

Is it apparent that the teacher is looking upon this class period as an opportunity to lift the pupils to new heights of understanding? On some such basis as this can board members or superintendent judge the attitude of the teacher.

(b) Attitude of Pupils Toward Teacher. This trip of inspection is made to observe the work of a teacher. In order to make a fair estimate we shall also observe the pupils.

How do they react under the teacher's direction?

Is there a feeling of sullen submission, of indifference, or disrespect?

Or, do the pupils follow the teacher gladly, eagerly, and understandingly?

Is there an abounding spirit of goodwill in evidence. These questions can well be considered by the visitors as they view the classes.

(c) Attitude of Pupils Toward Each Other. Another matter should be observed. The schoolroom houses a miniature society. Here the pupils are learning to give and take in the little relationships of the school day. They are laying the foundation for adult activities in the great world just ahead. Their ideas are still plastic and under the partial control of the teacher.

Is there that freedom and tolerance that should prevail in a democratic school system?

Do the pupils respect each other, or are the strata of society already in the process of formation? It is certain the teacher cannot be held responsible for every undesirable condition that may exist in this respect, but a serious attempt should be made to overcome wrong attitudes, before they develop too far.

(d) Attitude of Pupils Toward Work. As intimated already in this article, efficient teaching involves a large amount of work on the part of the pupils. A class cannot be learning well when the teacher is doing all the work. The pupils should be busily engaged in the process of mastering the lesson. The inspectors will be interested to know whether the pupils attack their problems with a real keenness and avidity.

Do they seem to enjoy the assignment, or is the feeling of aversion very evident?

Are they marking time until dismissal? These are conditions which may be traced to the teacher's ability to manage and direct the work of the room. All these four items under "Management" are largely under the teacher's control. An efficient handling of the classroom in these respects will go far toward raising the standard of instruction.

3. *Personality of Teacher.* A great many different ideas have arisen as to the meaning of personality. It is rather an elusive term. Some people have seen fit to weave into it practically all the qualities that a teacher should possess. Some have thought of it in terms of one factor, such as temperament, poise, and the like. A little clear thinking will enable us to differentiate between some of these characteristics, however, and bring us down to a workable basis. Obviously certain things may better be placed under some of the other headings we are discussing. For the purposes of the brief visit of inspection we cannot carry on an exhaustive discussion, concerning the personality of the teacher, but will confine it to a few salient features. These mental questions may be asked by the visitors.

Does the teacher display the proper degree of refinement?

Are there those many little evidences of an understanding of the right thing at the right time, which go so far toward making a teacher acceptable?

Or, is it evident that the teacher is lacking in those niceties of deportment, so that even the pupils are aware of it?

Does the teacher have a harsh, unpleasant voice, which irritates the pupils and hinders the work of the class?

Or is the voice rich and mellow, attuned to the acoustics of the room and harmonious with the atmosphere of study? A layman, with little or no experience in school work, can form a fair estimate of the teacher's voice.

The observing committee will also be interested in the general appearance of the teacher.

Is there that neatness of dress that marks the person of culture?

Or is there a carelessness about dress and appearance that will set a low standard for pupils to follow? It is well, also, to take note of the address or manner of approach which the teacher displays.

Is there that ease and grace about meeting people, introducing and approaching others, which delights and holds folks?

All of these matters should receive proper attention by the visitors and be given due weight. There are other items which may properly be considered under the teacher's personality, but space does not permit of a discussion here.

4. *Appearance of Room.* It is not necessary to have long years of experience to be able to inspect the appearance of a schoolroom. There are, of course, some physical surroundings and appointments, apparently out of place from the layman's viewpoint, which can be understood only when considered in connection with their purposes and uses. The inspection on this occasion may be confined to general matters.

(a) General Housekeeping. These mental questions may well be put:

Is the teacher a good housekeeper?

Is the general appearance of the blackboards inviting, or do they set an example of slovenliness?

How about materials piled up about the room, in the cabinets, and on the teacher's desk?

Do the pupils keep their surroundings clean?

(b) Artistic Touches. The room may be scrupulously clean and well ordered, and yet be barren of the finer touches of beauty, which ought to adorn this little world, where youthful minds are being nurtured. There may be a forbidding austerity about the place, wholly lacking in those aesthetic touches, which mean so much in education. A few observations in this respect will be beneficial in drawing up an estimate of the teacher.

5. Interview with the Principal. The observations in the classroom are now complete. The party will visit the office of the principal for a brief chat. It may be necessary to carry on this conversation in a very tactful manner. If all parties are aware that the teacher is being considered for another position, the questions may be direct. Since even some of these may not lead definitely to the information sought, it may be well to ask this direct question. "Would you hire this teacher?" The principal's answer to this question will usually give his real judgment in the matter, based on his experience.

The visit to the neighboring city is now completed. Our party will return home and come to a conclusion on its findings. It will be noted that very little, if any, audience has been obtained with the teacher. This could have been arranged on the day of the visit, but for the purposes of this discussion has been left for the second part, which will now be taken up.

II. The Teacher Calls on the Superintendent

In this part of the discussion let us assume that preliminaries have been attended to. The application has been filed and credentials have been checked up. Negotiations have proceeded to the point where the teacher is calling on the superintendent, by appointment. Members of the school board may be present.

1. *The Meeting.*

(a) The Introduction. We have already touched a little on the manner of approach and general bearing, which the teacher displays. It will be well to observe the culture and ease, or lack of it, which is manifested on this occasion. It is quite likely that this meeting will be a fair index of what to expect throughout the period of service.

Does the teacher lead up to the matter in hand with a directness and a poise that presage capability?

MR. WILLIAM DICK,
Philadelphia, Pa.

(b) The Superintendent's Manner. Just a word here may not be amiss. It cannot be said that teachers have always been given the courteous attention that is due them. It is so easy for the superintendent, or board members, to become engrossed in other matters, forgetting that an applicant for a position is entitled to due consideration, even though the place has been filled. A little thoughtfulness will work toward a better understanding on all sides.

2. *The Conference.* The introduction over, all parties are seated to discuss business.

(a) Direct Questioning. It is well to have in mind a definite idea as to the purpose of this meeting. It should not drift along, getting nowhere, until both sides are glad it is over. Questions may be asked about specific things concerning the teacher's preparation, even though it be indicated in part on the application. This is for the purpose of drawing out the teacher's viewpoint and attitude on certain features. Questions about personal likes and dislikes, especially those having a bearing on school work, may properly be asked.

(b) Hypothetical Questions. Thus far the conference has proceeded along rather formal lines. The discussion has been of such a nature that the teacher could answer guardedly, without having a real insight into the business in hand. It will be well to turn the discussion into local channels and deal in terms of actual problems. Hypothetical situations may be set up and an expression gained from the applicant as to the best method of procedure. Several cases may thus be discussed, resulting in a first-hand impression of the teacher's understanding of real school problems.

EDWARD HAAS,
Secretary, Board of Education,
Wyandotte, Michigan.

In summing up, let us say that the job of interviewing a prospective teacher is an important problem of administration. Whether it falls to the principal, superintendent, or board members, to find the new teachers, the procedure should be worked out scientifically. There are certain definite things that should be done at the right time. A well-planned scheme will surely be productive of good results.

MR. WILLIAM DICK HONORED

Completes Fifty Years of Service with Philadelphia Schools.

"1875—From Clerk to Assistant Secretary and to Secretary—1925."

This is the inscription on a silver loving cup presented on June 9th to William Dick, secretary of the Philadelphia Board of Education, by the members of the board, at a dinner at the Manufacturers' Club. The affair marked the completion of Mr. Dick's fiftieth year of continuous service with the Philadelphia school system.

Presentation was made by William Rowen, president of the board, who, after eulogizing Mr. Dick's career, said the secretary had seen a greater transformation in the educational system during his period of service than had taken place in any other similar length of time.

"Just fifty years ago tonight, Mr. Dick, then hardly seventeen, had finished his first day's work for the board of education," said former Judge Dimner Beeber.

"It is in appreciation of the faithful service he has unfailingly given that the board has had engraved on the loving cup the resolution passed this afternoon at the board meeting, which is:

"Be it resolved, that we congratulate our esteemed secretary, William Dick, on the completion of fifty years' service. And be it further resolved that we express to Mr. Dick our deep and lasting appreciation of the value of the service he has rendered during these fifty years.

"Mr. Dick was elected to fill a vacancy caused by the death of his father, James Dick, assistant secretary of the board.

"One hundred and sixty-eight men of prominence in public affairs have served on this board during his connection with it, and it is no exaggeration to say he has held the respect of all."

Mr. Dick, in response, spoke of the changes which have taken place in educational activities since he became affiliated with the board.

"In the old days, prior to 1882, when the first superintendent was elected, the board was largely the determining factor in school administration," he said. "As each ward in the city was represented, each member was anxious to get as much for his locality as possible, with a resulting lack of unity.

"I recall how meager was the financial support given to the schools by the City Councils of those days. In order to get appropriations the board often was forced to accept them with the stipulation that certain definite personal favors be done, such as awarding contracts to influential friends.

"A teacher's wages in 1879, when the salary schedule was put into effect, was $320 a year, payable in quarterly installments.

"What success I may have had in my educational work, is in a great measure due to the unusual cooperation of the board and my associates in the administrative work."

EDWARD HAAS

Secretary, Board of Education
Wyandotte, Michigan

Mr. Haas's school administration career began in 1920, when he was elected a member of the board of education by a large majority, and was reelected in 1923 for another three-year term. He was chosen secretary because of his special fitness for the job. He had worked in a commercial capacity, rising from office boy to an executive position.

During the past three years he passed through a building program involving an expenditure of over $1,000,000. Simultaneously with his school labors he serves as an accountant in one of the large automobile agencies.

School Budgets and Budget Procedure

III—Budget Procedure

Wallace Emerson

We have already discussed the question of the state laws as applied to city and district budgets. In order to determine to what extent actual budget practice conforms to these laws a questionnaire study was determined upon. Over 400 questionnaires were sent to cities throughout the United States, and from this number 212 reported. These cities were arbitrarily grouped into five classes.

Class I—Cities of over 100,000 population, 50 questionnaires were sent; 35 replies were received.

Class II—Comprises those cities of 30,000 to 99,999 population; 75 questionnaires were sent to cities of this class, 35 answered.

Class III—Included cities of 10,000 to 29,999 population; out of a total of 85 questionnaires sent, 63 replied.

Class IV—Included cities of from 5,000 to 9,999 population; a total of 43 answers were received from the 90 questionnaires mailed.

Class V—Included cities of from 2,500 to 4,999 population; out of a total of 105 questionnaires, but 32 answers were received.

It will be seen that cities of Class I give an excellent sampling of cities of that size, including as it does 51 per cent of the total number in the United States. It will be noted, however, that cities of this class are frequently made exceptions in the state school laws and may be governed by special state charters.

There is a total of 183 cities in the United States between 30,000 and 100,000 population. This does not give us so good a sampling, but is probably adequate for our purposes. In Class V the sampling is very inadequate, but as cities of this size usually conform in procedure to general school laws of the state the number is probably sufficient to give a cross section of the situation.

It will be noted in Table 1 that many of the western states have no cities in Class I and II. If we summarize the state representation by cities we have the following:

1 state by 8 cities
5 states by 7 cities
12 states by 6 cities
5 states by 5 cities
8 states by 4 cities
8 states by 3 cities
3 states by 2 cities
5 states by 1 city
0 state by 0 city

Budget Practices in 212 Cities of the United States

In the 35 cities of Class I, the following reported that a budget was required by their state law:

Cleveland, Cincinnati, Fall River, Grand Rapids, Indianapolis, Jersey City, New Orleans, Oakland, Paterson, Philadelphia, Portland, Richmond, San Francisco, Seattle, Spokane, Washington, D. C., Youngstown (Ohio).

Seventeen cities, or 49 per cent, are included in this group.

Fifteen cities, or 43 per cent of Class I, report that a budget is required by their municipal charter. They are:

Atlanta, Baltimore, Denver, Detroit, Fall River, Nashville, New Haven, Oakland, Providence, Rochester, St. Paul, San Francisco, Scranton, Syracuse, and Worcester.

Six cities, or seven per cent of Class I report that a budget is required by the county authorities. This group includes:

Cleveland, Oakland, San Francisco, Richmond, Seattle and Scranton.

Twenty cities, or 57 per cent of the Class, report that a budget is required by the city board of education: viz.,

Atlanta, Boston, Chicago, Fall River, Indianapolis, Kansas City (Mo.), Louisville, New Haven, Oakland, Omaha, Paterson, Philadelphia, Portland (Ore.), Providence, Richmond, St. Louis,

TABLE 1—Number of Cities Who Reported in Each State—By Classes

STATE	I	II	III	IV	V	Total
Alabama	1	2	1	1	1	6
Arizona	0	0	2	2	0	4
Arkansas	0	0	2	1	0	3
California	2	1	1	2	0	6
Colorado	1	0	2	0	0	3
Connecticut	1	1	2	0	1	5
Delaware	0	0	0	0	1	1
District of Columbia	1	0	0	0	0	1
Florida	0	0	2	0	0	2
Georgia	1	1	1	1	0	4
Idaho	0	0	1	2	0	3
Illinois	1	0	3	0	1	5
Indiana	1	3	1	1	0	6
Iowa	0	3	2	2	1	8
Kansas	0	2	2	2	1	7
Kentucky	1	0	1	1	0	3
Louisiana	1	0	0	0	0	1
Maine	0	0	2	1	1	4
Maryland	1	0	2	0	1	4
Massachusetts	4	2	1	1	0	8
Michigan	2	0	1	3	0	6
Minnesota	1	1	2	1	1	6
Mississippi*	0	0	1	0	0	1
Missouri	2	2	1	0	2	7
Montana	0	0	2	0	1	3
Nebraska	1	1	1	1	1	5
Nevada	0	0	1	2	2	5
New Hampshire	0	2	1	0	2	5
New Jersey	2	1	2	1	0	6
New Mexico	0	0	1	1	2	4
New York	2	1	2	1	1	7
North Carolina	0	1	0	0	0	1
North Dakota	0	0	1	1	1	3
Ohio	2	2	0	1	1	6
Oklahoma	0	1	2	2	2	7
Oregon	1	0	1	1	3	6
Pennsylvania	2	2	0	1	1	6
Rhode Island	1	1	1	0	0	3
South Carolina	0	1	0	0	0	1
South Dakota	0	0	2	1	1	4
Tennessee	1	0	1	1	0	3
Texas	0	3	2	1	0	6
Utah	0	1	1	1	1	4
Vermont	0	0	2	2	0	4
Virginia	1	2	1	3	0	7
Washington	2	0	3	0	1	6
West Virginia	0	1	3	1	0	5
Wisconsin	0	1	1	1	0	3
Wyoming	0	0	1	0	1	2
Total Cities	35	39	65	44	32	215

States represented by Class I—24
States represented by Class II—26
States represented by Class III—42
States represented by Class IV—31
States represented by Class V—25

St. Paul, Scranton, Worcester (Mass.), Washington, D. C. (Budget Bureau).

In the foregoing we see that the county plays a relatively small part in the matter of budgets, while the city, through its board of education and its municipal charter, is much more important. We see that the state laws affect less than half of the cities of this Class.

When we come to a discussion of the form of city budgets, we find that only eight cities, or 23 per cent of Class I, report that their budget form is prescribed by the state law. These are:

Cleveland, Cincinnati, Fall River, Oakland, Seattle, Spokane, Washington, D. C. (Congress or Budget Bureau), and Youngstown.

But one city, Indianapolis, reports that its form is prescribed by a state board. Two cities, both in California, Oakland and San Francisco, report their budget form prescribed by the state superintendent.

Fifteen cities of this Class, however, report that their budget form is prescribed by municipal authority. They are:

Atlanta, Denver, Detroit, Nashville, New Haven, Paterson, Rochester, St. Paul, San Francisco, Scranton, Syracuse, Worcester.

This comprises 43 per cent of the cities of Class I, and shows the close municipal control exercised by the large cities over school expenditures.

There are nineteen cities, or 54 per cent of the Class, whose boards of education prescribe their own budget form. They include:

Atlanta, Denver, Detroit, Indianapolis, Jersey City, Kansas City, Louisville, New Haven, Omaha, Paterson, Philadelphia, Portland, Providence, Richmond, St. Louis, St. Paul, Scranton, Worcester, and Washington, D. C.

It will be noted that several cities report in more than one category which may be interpreted as meaning that certain minima are required by one authority and that others are supplemented by items required by other authorizing bodies. In summarizing we may say that in cities of the First Class the form is prescribed mainly by municipal authority and the board of education. The state law, the state boards, and state superintendent apparently have little to say in the matter.

When we come to compare the budget forms used, with the United States Bureau of Education standard budget, we find that ten cities, or 29 per cent, have a form which is an elaboration of the standard budget. These are:

Cleveland, Chicago, Denver, Detroit, Indianapolis, New Haven, Seattle, Scranton, Spokane, Washington, D. C.

Four, or 11 per cent, use a condensation of the standard budget:

Cincinnati, Grand Rapids, Oakland, and Rochester.

Four use the standard budget with little or no change:

Jersey City, Louisville (beginning 1924), New Haven, Philadelphia.

Thirteen cities, or 32 per cent, make no attempt to conform to the standard budget. This group includes:

Atlanta, Baltimore, Boston, Kansas City, New Orleans, Omaha, Paterson, Portland, Providence, Richmond, San Francisco, Syracuse, Worcester.

Thus we see that eighteen cities make some attempt to follow the standard budget, while thirteen do not.

Every city but New Orleans, which did not reply to the question, reported that its budget was based on a careful cost accounting system.

Seventeen cities of this Class reported a statistical department:

Atlanta, Baltimore, Boston, Cleveland, Chicago, Cincinnati, Denver, Detroit, Fall River, Indianapolis, Kansas City, New Orleans, Oakland, Omaha, Rochester (independent bureau of municipal research), St. Paul, Seattle.

Of these seventeen cities, ten reported that the statistical department gives important aid in making the budget:

Cleveland, Chicago, Denver, Detroit, Indianapolis, Kansas City, Oakland, Omaha, Rochester, Seattle.

No attempt was made in the questionnaire to inquire into the nature of the statistical department, as to whether its efforts were chiefly devoted to child accounting or to cost accounting, or to some other phase of statistical work.

When we come to the question of budget responsibility, we find that the chief executive officer, viz., the city superintendent, is responsible for the budget in but five cities of Class I:

Atlanta, Denver, Detroit, Fall River, Washington, D. C.

The clerk, business manager, or comptroller is responsible for eleven:

Chicago, Grand Rapids, Indianapolis, New Orleans, Paterson, Philadelphia, Rochester, St. Paul, Scranton, Seattle, Worcester, and Youngstown.

In five cities,

Baltimore, Nashville, New Haven, Providence, and San Francisco,

the board of education or a board committee is responsible for making the budget, while in twelve cities there is a joint responsibility of two or three of the executive officers (clerk, superintendent, or statistician); and it is significant that in nine of these twelve cases the superintendent is one of those jointly responsible. In all but fourteen per cent of the cases, then, we have gotten away from the old method of budgeting through a legislative body, and have put the budget responsibility where it belongs, viz., with the executive officers.

When it comes to the actual preparation of the budget in cities of this class, we find eight cities, or 23 per cent, in which the clerk or busi-

ness manager does the actual work of preparation:

Denver, Grand Rapids, Nashville, New Orleans, Philadelphia, Worcester, Seattle, Youngstown.

In three cities the statistician actually prepares the budget:

Detroit, Indianapolis, Spokane.

In four cities, the superintendent actually prepares it:

Atlanta, Baltimore, Fall River, and Jersey City.

Fourteen cities report that the budget is prepared jointly by the business manager, the statistician, and the superintendent—by all three, that is, or by any two. These cities are:

Boston, Kansas City, Oakland, Omaha, Washington, D. C., Cleveland, Chicago, Cincinnati, Detroit, Louisville, St. Louis, Providence, Rochester, and Scranton.

It is a pleasure to note that in one city only (San Francisco) does the board attempt actually to prepare the budget. If we refer to the principles of budgeting laid down in the first article, we may feel that this is an extremely healthy showing for cities of Class I, and that it could be improved only by giving the city superintendent the official responsibility in all cases for the preparation of the budget.

When it comes to the question of subordinates aiding in the preparation of the budget, we find that eighteen cities report that they utilize the aid of supervisors in the work; thirteen, of principals; sixteen, of department heads; eight, of teachers; and five, of janitors. Six cities report that all five aid; three, that all but janitors aid; four, that they receive aid from supervisors, principals, and department heads only; and fifteen receive no aid of this kind whatever. Three superintendents recommend a greater participation in budget preparation by these subordinates. Twenty-four do not recommend it.

Turning now to a consideration of the other classes of cities that report that a budget is demanded by the state law, we find the following:

Table 2

I

Cities Where Budget is Demanded by State Law

			Cities	Per Cent
Class I	35	cities Demanded by	17.....	48.5
Class II	39	cities Demanded by	21.....	54
Class III	63	cities Demanded by	28.....	44.5
Class IV	43	cities Demanded by	19.....	44
Class V	32	cities Demanded by	20.....	62.5
	212		105	50% Av.

II

Cities Where Budget is Demanded by Municipal Ordinance

			Cities	Per Cent
Class I	35	cities Required by	15.....43	
Class II	39	cities Required by	11.....28	
Class III	63	cities Required by	12.....19	
Class IV	43	cities Required by	9.....21	
Class V	32	cities Required by	4.....12.5	
	212		51	24% Av.

III

Cities Where Budget is Demanded by County

			Cities	Per Cent
Class I	35	cities Required by	6.....17	
Class II	39	cities Required by	6.....15	
Class III	63	cities Required by	9.....14	
Class IV	43	cities Required by	12.....28	
Class V	32	cities Required by	5.....15.5	
	212		38	18% Av.

IV

Cities Where Budget is Required by Board of Education

	Total Cities		Cities	Per Cent
Class I	35	Required by	20	67
Class II	39	Required by	26	67
Class III	63	Required by	30	48
Class IV	43	Required by	23	54
Class V	32	Required by	15	47
	212		114	54% Av.

In the above tabulations we find that the budget is demanded by the state law in 105 cities out of a total of 212 (50 per cent), and that there is no group outside of Class V, more than 50 per cent of which reports the budget to be demanded by state law. We would rather expect cities of Class V to do only such budgeting as was required by state law, and the 62.5 per cent seems to emphasize this strongly. We find that 43 per cent of the cities in Class I report that the budget is demanded by municipal ordinance, and only 28 per cent in Class II, which is again what we would be likely to expect. There seems to be no very large percentage of cities in any group that report the budget demanded by the county. The percentages range from fourteen to 28 per cent, and do not seem to me significant. When we come to notice the cities where the budget is required by the city board of education, we find that over half (54 per cent, to be exact), report a budget required by the city board. The range is from 47 to 67 per cent.

(To be concluded)

School Janitorial and Engineering Service

VI —Housekeeping—Janitors' Tools and Care of Tools

Geo. F. Womrath, Assistant Superintendent in Charge of Business Affairs, Board of Education, Minneapolis, Minn.

Every school system of more than one school, and every school board which demands uniformity in the care and maintenance of its buildings, should provide standardized tools and methods for doing the janitorial-engineering work which has to be done. Indeed this is a most important matter in order that economy may be practiced in the purchase and storing of tools and supplies; that replacements may be made quickly; and that janitors transferred from one building to another will not find new methods of procedure in every building.

If the work in every building were directed by a different person, and if every building had different tools and different methods for doing the housekeeping work, it is quite likely that the results would be about the same as what happened to the broth when there were too many cooks.

For this reason the Minneapolis board of education, after many years of experimentation, has adopted the following tools as the standard implements for use in all school buildings throughout the city for the janitors to use in the performance of their work.

CORRECT LENGTH OF FLOOR BRUSHES.

SECTION 1. *Floor Brush:* The methods of maintaining and cleaning schoolhouse floors, as will be described in a later article, greatly reduce the extent of usage of the floor brush and minimize its importance as a housekeeping tool. However, it must still be included with the janitor's set of tools, being used in the maintenance of classroom and corridor floors for the sweeping of extraordinary amounts of dirt, for sweeping wood floors before preserving them, for sweeping cement floors before hardening and filling them, for sweeping the boiler room floor and sidewalks, and for scrubbing floors.

A satisfactory floor brush is made up as follows: Seventy per cent Russian or Chinese bristle, fifteen per cent horse hair and fifteen per cent fibre, and having a four inch out-bristle.[1] Brushes when new should be used in the classrooms. When they become worn, they should be used in the corridors and on the stairways. After that they should be used in the basement. And finally they are used on the sidewalks, and boiler room floor until the out-bristle measures 1½" or less, after which they are used as scrubbing brushes.

A new brush with an out-bristle of more than four inches cannot be used satisfactorily as a floor brush as it is so soft it passes over the dirt and is not effective.

Handles are purchased in six foot lengths but should be cut to lengths to suit the individual users. To determine what this length should be, insert the handle in the brush and then stand the brush on the floor with the handle in a perpendicular position. Then mark the handle at eyebrow height and cut it to this length.

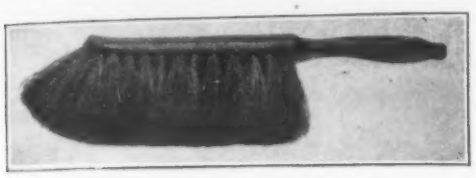
The position of the wrist in sweeping is of the utmost importance, and the length of the handle determines the correct position of the wrist. Every janitor should, therefore, have a handle to suit his own height, in order that he may perform his work in an erect position and without cramping the wrist. Bear in mind that the palm of the hand is placed over the end of the handle instead of along the handle.

The floor brush when not in use should be hung up by the handle, with the head not closer than six inches to the floor, and with the bristles away from the wall. Lint and other dirt gathers in the bristles and works back to the wood head, and unless combed out throughly each day with the nail brush forms a thick mat and destroys the efficiency of the brush (see Sec. 6 of this Article). Floor brushes should be kept dry.

CORRECT POSITION FOR SWEEPING.

[1]The "out-bristle" is the part of the bristle that projects beyond the head of the brush.

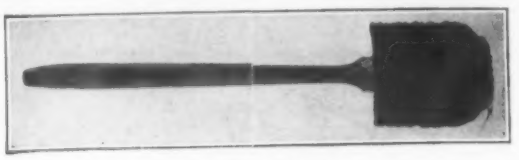
SECTION 2. *Counter Brush:* The counter brush has a nine inch head and is made of black horse hair and bristles. It is used as a utility brush in places where dirt cannot be reached easily with any other style of brush. Use the



COUNTER BRUSH.

nail brush (see Sec. 6) to keep the counter brush clean. Counter brushes should be kept dry.

SECTION 3. *Hopper Brush:* The hopper brush is used for the daily cleaning of toilet bowls. It is made of Tampico fibre which



HOPPER BRUSH.

stands up well in water. For sanitary reasons the brush has a handle 24" long.

The hopper brush should be washed out thoroughly in cold water after using.

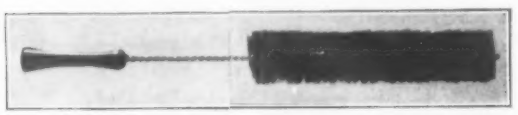
SECTION 4. *Sanitary Closet Brush:* The sanitary closet brush is used for the cleaning of toilet bowls that have become badly soiled and discolored. It is a short-handled, stiff ox-

SANITARY CLOSET BRUSH.

fibre brush. The handle must be short in order to stand up under direct and heavy pressure, which is necessary to remove stain and incrustation.

Sanitary closet brushes should be washed out thoroughly in cold water after using.

SECTION 5. *Radiator Brush:* The radiator brush is made of twisted wire with a handle about three feet long and with horse hair filled in at one end for a distance of eight inches.



RADIATOR BRUSH.

The radiator brush should be kept dry, and frequently combed out with the nail brush (see Sec. 6).

SECTION 6. *Nail Brush:* The nail brush is made of six-penny finishing nails driven through a wood handle and with ends rounded by dipping in solder, to prevent damaging the wood heads of other brushes. The nail brush is

NAIL BRUSH.

used to comb the lint and dirt from all schoolhouse brushes made of bristles and horse hair. The combing must be done when the brushes are dry.

SECTION 7. *Scrub Brush:* The scrub brush is used only for the brushing of mops (Sec. 11) and dusters (Sec. 9) in order to remove the exterior dirt and lint.

The scrub brush is made of palmetto stock, set in a solid wood back. The back is 9"x2", set with fibre bristles 2" long. The brush weighs 8¼ ounces. It should be frequently combed out with the nail brush (Sec. 6).

SECTION 8. *Corn Broom:* Corn brooms with a weight of 32 pounds to the dozen are the most satisfactory as they are heavy enough for all schoolhouse purposes and stand up well when sweeping rugs and school entrances, and are not too heavy when used for sweeping snow from shoes. A covering made of an old woolen sock, with the foot cut off, and stretched over the straws will greatly prolong the life of the broom.

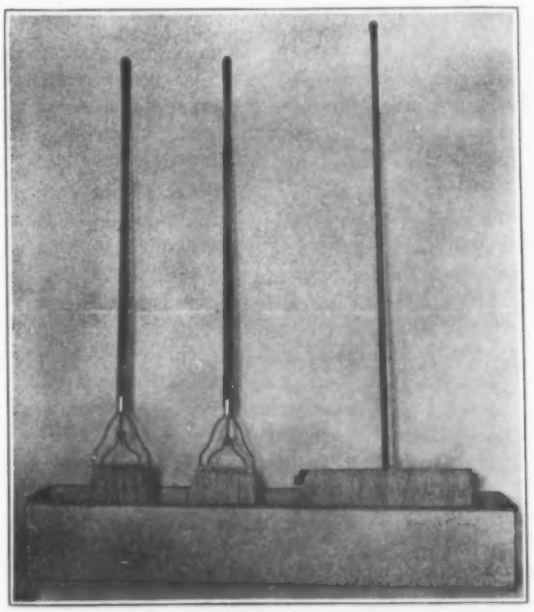
SECTION 9. *Sanitary Dusters:* The sanitary duster is an oval shaped brush made of short strands of cotton yarn tied at the ends to a cloth core, which is slipped over a wire form and fastened so that it will not come off. The wire is fastened into a handle. The shape adjusts itself perfectly to the work required of a duster in a school building, except for the dusting of grill work, ornamental iron banisters and ornamental brackets, for which a special

SANITARY DUSTER.

sanitary duster that can better remove the dust from small openings must be used. This latter duster consists of a handle fourteen inches long to which is fastened a bell like bunch of soft cotton cord about six inches in length.

Sanitary dusters are sprayed with M. P. S. Cleaner and when they become soggy and dirty, they should be placed in a pail of M. P. S. Cleaning Solution and allowed to stand for 48 hours and then thoroughly wrung out in a wringer pail (Sec. 17) of hot water. Change the water and repeat the operation until the dusters are clean.

SECTION 10. *Plumbers' Friend, or Force Cup:* The schoolhouse size consists of a 4½" rubber cup, without valves, and with a 24" handle. Care should be taken that the cup is never pressed down entirely as this cracks and destroys the rubber walls of the cup. The force



MOP BOX.

cup is used for forcing obstructions and water out of toilet bowls, sinks and wash bowls that have become clogged.

SECTION 11. *Mops:* For the proper maintenance of school house floors, three mops are necessary, each one of which performs a very important function. These mops are: (1) Sweeping mop; (2) scrubbing mop; (3) hall mop.

A mop is made up of: (a) Handle; (b) mop head holder or clamp; (c) mop head.

The sweeping mop and the scrubbing mop have the same handle and mop head holder. The handle is wood and the mop head holder, or clamp, is of iron, and narrow enough to fit into small spaces.

The hall mop has an iron pipe handle and a wide iron pipe mop head holder, or clamp, so that a large amount of floor space can be covered every time the mop is "run," that is, pushed along the floor.

SECTION 12. *Mop Heads:* There are only two sizes of mop heads used in the schools, and the only difference in the two sizes is in the *length* and number of the strands. The width of the mop heads and the material out of which they are made is identical.

The strands in all mop heads are made of soft cotton, with a great capacity for absorbing liquid. The texture is such that the strands pick up dirt readily and yet shed it quickly when the mop head is shaken.

Both mop heads are six inches wide, but in one head the strands are eighteen inches long and in the other head the strands are 36 inches long. These are the overall measurements from end to end when the mop heads are laid flat. The eighteen inch, or short strand mop head, has double the number of strands in it that are used in the 36 inch, or long strand mop head. The weight of the individual strands is the same in both heads.

When the wood handle and narrow mop head holder is fitted with a short strand mop head, the outfit is called a "sweeping" mop. When fitted with a long strand mop head the outfit is called a "scrubbing" mop.

The mop with the iron pipe handle and wide iron pipe mop head holder is invariably fitted with the long strand mop head, several heads being used to fill the holder. This outfit is called the "hall" mop. The short strand mop heads are never used in the "hall" mop.

All mop heads have a binding band in the middle. This binding band fits into the mop head holder so that the actual length of the strands projecting beyond the mop head holder when in use are 9 inches and 18 inches, respectively.

The "sweeping" mop is made up of one short strand mop head.

The "scrubbing" mop is made up of two long strand mop heads.

The "hall" mop is made up of five long strand mop heads.

Before new mop heads are used, either for sweeping or scrubbing, they should be wrung out in boiling water and then hung up to dry. This will harden the lint in the mop head and prolong its life. If the mop is to be used for sweeping, spray one half of a pint of M. P. S. Cleaner into the new mop head. This should be done six hours or more before using.

Before putting the mop away after being used, it should be brushed, shaken out thoroughly, and sprayed again with just enough Cleaner to keep it damp, but not soggy or greasy. A mop in this condition is called a "treated" mop. A properly treated mop should always appear clean and fluffy when taken out to be used.

Sweeping mops should never be hung up but should be stood in the mop box (see Sec. 13)

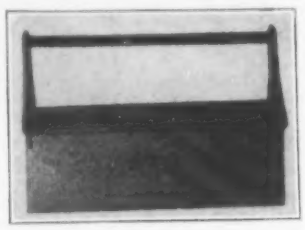
with the handle up and the mop heads down to minimize the evaporation of the Cleaner, and to prevent the possibility of spontaneous combustion. Mops should never be put away in a dirty condition.

When mop heads are worn out, they should be burned immediately, to eliminate any possibility of a fire hazard.

Mop heads used for scrubbing should never be used for sweeping. Mop heads that have been used for scrubbing should always be taken out of the mop head holder immediately after having been used and thoroughly washed out in a mixture consisting of one pint of Cleaning Compound to nine quarts of water and then hung up to dry.

Mop heads used for sweeping must be cleaned whenever they become dirty and soggy. Sweeping mop heads are washed out in the same mixture as is used for washing scrubbing mop heads except that after being washed they are rinsed in warm water until clean and then hung up to dry.

SECTION 13. *Galvanized Iron Mop Box:* The mop box is made of galvanized sheet iron. The dimensions are eight inches in width, ten



DUST BOX.

inches in depth and sixty inches in length. A box of this size will accommodate two sweeping mops and a hall mop.

SECTION 14. *Galvanized Iron Dust Box:* The dust box is made of galvanized sheet iron, as a metal box can be kept cleaner than a wooden box. This dust box has no holes in the bottom or sides and is of tight construction throughout, to prevent dirt from sifting through. The box is 21½ inches long, seven inches deep, 8½ inches wide at top and six inches wide at bottom. From floor to top of handle fourteen inches.

DUST PAN

MOP PAIL.

SECTION 15. *Galvanized Iron Dust Pan:* The dust pan is made of galvanized sheet iron 10½"x16" and is made up especially for schoolhouse work and to withstand rough usage. It hugs the floor and picks up the dirt easily.

SECTION 16. *Galvanized Iron Pail:* A fourteen-quart galvanized iron pail has been found to be the most convenient size for schoolhouse use. It is fitted with a heavy wire handle riveted to the pail and having a wooden grip. The three-fourths inch chime at the bottom of the pail is a great convenience when emptying the pail. The pail should always be washed out before being put away.

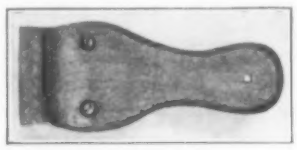
SECTION 17. *Wringer Pail:* The wringer pail is of cypress wood and of fourteen-quart size. On moist wringer pails made of wood, the foot rest is held in place with screws or nails or lugs. This is poor construction. Bolts only should be used. Such a wringer pail is well protected for rough usage, is not expensive, and has been found to be the ideal pail for use in school buildings. The wringer pail should be scrubbed and cleaned and half filled with water when put away after using.

SECTION 18. *Chamois Skin:* It is of the greatest importance that genuine chamois and *not a sheep skin* be used. The difference between genuine chamois and sheep skin can be easily determined when the skin is washed. A genuine chamois skin can be held firmly in the hands, whereas a sheep skin when squeezed oozes out between the fingers like angle worms. Also, sheep skin is thicker in some places than in others, whereas a good chamois skin is of the same thickness throughout and the nap of the chamois skin is more velvety than is that of the sheep skin. An eighteen inch square is a good size to use. A chamois skin should always be washed out in warm water (not hot) and hung up to dry before being put away.

SECTION 19. *Cleaning Cloths:* A good quality of cotton cheese cloth, although costing a little more money than inferior cloths, has been found to be the best for cleaning purposes in the long run, because it grips painted and enameled surfaces, woodwork and glass in a way which other kinds of cloth will not.

SECTION 20. *Putty Knife, Pliers and Screw Driver:* A putty knife, a pair of pliers, and a screw driver are tools which should be carried constantly by every janitor-engineer while on duty. In order to make it very convenient to carry these tools, a leather case into which these three tools fit is given to each janitor. The case is provided with a slip ring so that it can be attached to the janitor's belt.

The putty knife is a most satisfactory tool to remove gum from floors and desks; to dig dirt out of corners; and for many other purposes.



PAINT SCRAPER.

The pliers and screw driver are used to keep bolts and screws tightened—the theory being that "a stitch in time saves nine."

SECTION 21. *Paint Scraper:* The paint scraper is used for the removal of paint and tightly adhering matter on glass, porcelain, marble, and similar surfaces.

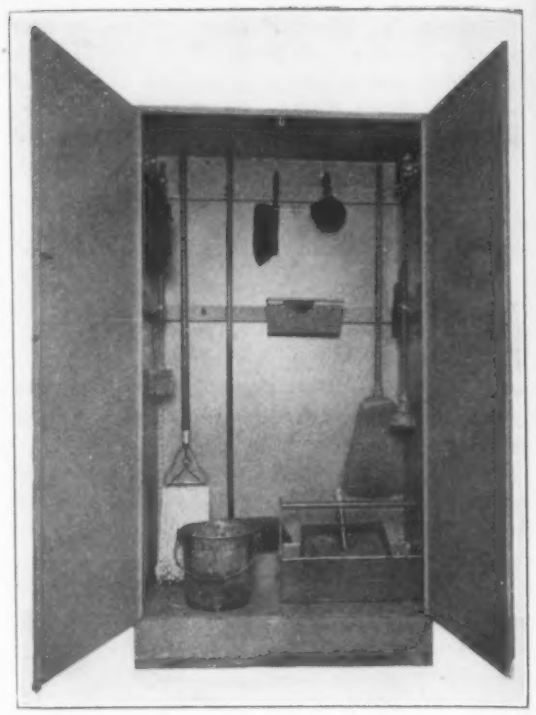
The handle of this tool is made of wood and in the shape as shown in the illustration, in order to provide a good grip. The broad end is slit sufficiently to accommodate a safety razor blade. Short bolts are used to pull the lips of the holder tightly together in order to hold the blade rigid.

Any of the safety razor blades that have straight sides can be used as the scraper. A straight sided blade is necessary as it is impossible to get into corners with a round sided blade.

SECTION 22. *Floor Scraper:* This tool is used for the removal of ink spots, bad stains, and surface blemishes on the floors. It consists of three parts, namely, the scraper blade, the shank, and the handle. The scraping blade is triangular in shape and made of cast steel, with a hole in the center through which the shank is inserted. The shank on the blade end is threaded and has a shoulder one-half inch from the end, against which the scraping blade rests. A nut holds the blade rigid.

SECTION 23. *Bamboo Basket (4 bushel):* This basket is used for collecting the waste paper and rubbish picked up from the corridors and rooms each day.

The frame work of the basket is made of ash strips interwoven with split bamboo. The



STANDARD JANITOR'S CLOSET.

basket is provided with wooden runners. The runners do not come with the basket, but can be easily attached by reinforcing the bottom of the basket on the inside with a sheet metal plate, which is the exact size of and conforms to the shape of the bottom of the basket. The runners are simply two hard wood strips, eighteen inches long, one inch thick and two inches wide, extending slightly out from the sides of the basket and placed parallel so that each is 4½ inches off the center of the basket. The strips are fastened by means of bolts run through the bottom of the basket and the sheet metal plate.

The dimensions are 27 inches across the top, twenty inches across the bottom and twenty inches deep.

The basket should be kept clean by brushing out occasionally and by thoroughly dumping out the contents each day.

The baskets are dragged along the floor by means of the handles. The hard wood skids prevent floors from being damaged.

SECTION 24. *Tool Cabinet:* A well built janitors' tool cabinet, that may be placed anywhere in the school building without being conspicuous and which does not detract from the appearance of other furniture, is furnished to each employee who has cleaning work to do. This cabinet is placed in the most convenient location with respect to the employee's work.

The purpose of this cabinet is to provide a definite place for the orderly storage of a large number of tools which otherwise become scattered, misplaced and lost. This cabinet provides a specific place for every tool and it follows that every tool, when not in actual use, must be kept in its place in the cabinet.

Not the least advantage of having a cabinet of this kind is that an inspection of the janitors' tools can readily be made and losses are not so likely to occur, as a missing tool is at once noticeable and the tools are out of the way when not in use.

The cabinet is made of eighteen gauge sheet steel, and has two doors with a three point locking device. A flat key lock is used that is master keyed. The finish of the cabinet is an olive green enamel. The inside of the cabinet is equipped with clips and brackets fastened to wood strips. These clips and brackets are used for holding the tools, each tool having its definite place. A metal box is also provided in

(Continued on Page 144)

Recognizing Individual Differences

As Practiced in Lincoln High School, Portland, Oregon

Norman C. Thorne, Lincoln High School, Portland, Ore.

A number of years ago I heard a speaker say: "It is the duty of a good teacher to get the lower third of the class through; most any kind of a teacher can get the upper third through." Later I repeated this remark to one of my classes and a bright student asked: "Have the good students no rights that a teacher is bound to respect?" I thought of that remark a good many times and came to the conclusion that the bright students and the hard workers were entitled to much more consideration than they ordinarily received.

In the fall of 1918 I had four sections in beginning chemistry. When the classes were reorganized at the beginning of the second term it happened that one section was composed of students, with but two exceptions, whose grades for the first term were 90 or better. The two arranged to be transferred to another class. The remark of my former student occurred to me and I decided to experiment a little. Instead of attempting to keep all four sections together, I assigned the work for each section according to the ability that was shown by the students of each section. By the end of the term the best section had done considerably more work than the poorest section and had done it much better. On the other hand, by going slowly with the poorest section and drilling them continually upon the fundamentals, I was able to get them to learn the minimum of work in good shape.

Ever since that time I have been convinced that some plan should be devised by which the students who do good work should be pushed to the limit of their ability. I discussed with a number of my fellow teachers the advisability of attempting to segregate the classes in the school on the basis of scholarship, but it was thought that the difficulties of such programming were insuperable.

In January, 1923, I decided that, inasmuch as I was principal, and responsible for the program, I would see what I could do toward segregating the classes according to scholarship. Our system of grading is as follows: E, 90-100; G, 80-89; F, 70-79; U, failure. I decided to try to program the students by segregating them on the basis of the grades each had received for work done during the fall term. The clerk compared the forecast with the Result Sheet and marked each forecast according to the grades as indicated on the Result Sheet, E, G, F, or U. If a student had an "E" in one subject and "F" in all the rest or vice versa, the one subject was also marked so that, when the student's program was made out, the student would be placed in the correct section in each subject. Whenever possible there was one class composed of students whose grades were "E"; there were also classes composed of students whose grades were "F." There were classes made of students some of whom had grades of "E" and some of whom had grades of "G." Likewise there were classes which were mixtures of those who had received "G" and those who had received "F." Our aim was to have no class in which there would be students with grades of "E" and students with grades of "F." We had very few such classes. To every teacher that was given an "E" class in a subject, an "F" class was also given in the same subject. This arrangement was made not only to prevent any charges of favoritism, but also to have an opportunity for comparison. Because of differences of ability, personality, and methods of teachers, there would be no good way to measure results if the "E" class in a subject were given to one teacher and the "F" class to another. As a matter of fact, each teacher usually had an "E" class, a "G" class, and an "F" class in the same subject. Further, it was assumed that the "E" classes would not need so much instruction as the "F" classes, and, therefore, the "E" classes could be made much larger than the "F" classes. The number in the "E" classes was from 25 to 30, but never more than 25 unless absolutely necessary. The maximum number of students for the "F" classes was set at 18, but in some cases we were forced to run over that a little. It can readily be seen that this will mean considerably more instruction per person in the "F" classes, which classes are the ones where the instruction is most needed. Of course, there are some students who are capable but lazy, and who do poor work because of laziness, but I believe that the large majority of those who receive a grade of "F" are lacking in either previous preparation or ability, or both.

The teachers were told of the experiment, but were cautioned to be very careful not to say anything that would give either the students or parents a wrong impression of what was being done until we had had an opportunity to give the plan a fair trial.

The classes so segregated were English 2, 3, 4, and 8 (the numbers indicate the terms); Mathematics 2, 3, 4; Latin 2; and History 5. The segregation was not attempted in the other subjects, partly because there was not sufficient time to do the work of programming, and partly because no definite plan had been worked out for deciding which were to be the "E" classes and which were to be the "F" classes. For example, the second period class in English 2 was the "E" class, while the sixth period class in English 4 was the "E" class. It was very apparent that some very definite plan would have to be worked out in order to avoid conflicts, but at that time the plan had not been discovered.

The heads of departments were instructed to go over the course of study and determine the minimum amount of work that must be covered in each subject in order that those who were in the "F" classes might be entitled to promotion at the end of the term if they completed the work satisfactorily. The heads of departments were also to suggest additional work that could be undertaken by the "E" classes in case they completed the regular work of the term before the end of the term. It was assumed that the members of the "F" classes either had had poor preparation or that they lacked ability for certain kinds of work. It was necessary, however, that they do a certain amount of fundamental work in order that they be prepared for the work of the next term. It was also thought that with the smaller numbers in the "F" classes the teacher would be able to give the added instruction that was necessary to remove some of the difficulties that these students had formerly encountered. The "E" students were to be worked to the maximum of their ability and so were to be given longer lessons and a greater variety of work. They were not to be allowed to "loaf." Of course, the work of the "G" classes would be in between that of the "E" and the "F" classes.

At the end of the fifteenth week the teachers were asked to hand in a written report of the work done up to that time in the various classes. In every case but one, the teachers reported that the "E" class had completed the work of the term at the end of the fifteenth week; the "G" classes would finish the term's work in about sixteen or seventeen weeks; the "F" classes would just complete the minimum amount of work at the end of the term. In other words, the "E" classes were doing from twenty to twenty-five per cent more work in the term and *were doing it better than the other classes.*

The statements of some of the instructors were worth noting. One day I visited a class in second term algebra. There were 28 in the class. I remarked that it was a pretty large class. The instructor replied: "I could teach a room full of students like these. They need only about fifteen minutes instruction a day; my next class needs about fifty minutes a day although it is a very small class. It is an "F" class and I have to give them a great deal of individual instruction."

A geometry teacher reports: "I have given my classes the same formal demonstrations thus far. The "E" and "G" classes have done more originals. In the review which comes later the "F" classes are not to be held for formal proofs in Inequalities."

An English teacher reports on an "E" class as follows: "I have not so far done more work, but I have done it much more in detail, because the students ask more questions and are interested in detail. I shall read some extra literature with the class before the term closes. This class is adorable." The same teacher reports of an "F" class: "I have tried to do the regular work but do not dwell at all on non-essentials. I try to emphasize technical work and more especially written work and grammar. I rather enjoy this class because the lazy ones are bright and the slow ones work. I have had many classes that were worse."

Of an "E" class another English teacher says: "I find that they take as much time for the literature as they did under the old plan, but the grammar and rhetoric they grasp very quickly. They will be able to cover Midsummer Night's Dream in addition to the regular work." Of an "F" class she writes: "Though slow, they are conscientious and steady."

As stated above, the first time the "E," "G," and "F" classes were selected in a sort of hit-and-miss fashion. There was no system for determining which periods were to be the "E" classes and which were to be the "F" classes. I was frequently asked how I was to arrange the program for the next term. Late in the summer the following plan was adopted and, with a few changes, has been used successfully ever since. The "E" classes in the different subjects are as follows: First period, Latin; second period, French; third period, English; fourth period, History; fifth period, Spanish; sixth period, Mathematics; seventh period, Science. Our school day consists of seven periods, 43 minutes net, with three minutes passing time, and a thirty minute study or assembly period between the second and third periods. Later it developed that we had more than one "E" class in some of the terms. The second "E" class, then, was as follows: Third period, Mathematics; second period, Science; sixth period, English. If a third was needed the order was: First period, English; fourth period, Mathematics; sixth period, History.

It can readily be seen that it does not matter what term the student is working in, he can be put in an "E" class in each subject without conflicts; in case he should be doubling in any subject there may be conflicts in case there is only one "E" class. The "G" and "F" classes

	"E" Classes	"G" Classes	"F" Classes	"U" Classes
Latin	1, 3	7, 2	3, 4	6
French	2	6	1	1
English	3, 6, 1	5, 6, 7, 2	2, 4, 7	1, 7
History	4, 6, 2	1, 2, 7	5, 6, 3	3
Spanish	5	3	6, 5	7
Mathematics	6, 3, 4	4, 5, 2, 1	1, 3, 7	2, 5
Science	7, 2	3, 4	1, 6	5

were determined in the same manner. A table of the classes will show more clearly the arrangement. The figures indicate the periods.

A study of this table will also show that a student may be "E" in one subject, "G" in others, "F" in others, and "U" in others, and still be placed in the right section in each subject regardless of the term. For example, a student might be taking Latin 2, Mathematic 4, History 7, and English 8; have "F" in Latin, "E" in Mathematics, "E" in History, and "G" in English. His program, then, will be Latin 2, third period; History 7, fourth period; Mathematics 4, sixth period; and English 8, seventh period.

Of course, there may not always be 25 to 30 students for an "E" class in a subject. In that case enough "G" students are added to the "E" group to make the class as large as is desired. In other words, we have separate classes for each grade if possible; if that is not possible, we have "E" and "G" students mixed, and "G" and "F" students mixed, but rarely "E" and "F" mixed. We always try to put the "repeaters" in a separate class because they can usually go faster at the start than a beginner.

A few examples of the character of the classes as they were when programmed under the old method, and then as they are after being revised according to this plan will clearly show the advantages of this plan over the old method.

It might be of interest to give the teacher's load:

13 have 100 students or less
11 have 101-110
12 have 111-120
6 have 121-130
1 has 134
1 has 135
1 has 153
2 have 158.

The last three are science teachers. The classes are too large, but we were forced to make the classes large because we had no other laboratory space. Stated in another way, we have

111 classes with 20 or less to the class
111 classes with 21-25 to the class
15 classes with 26 to the class
9 classes with 27 to the class
1 class with 28
3 classes with 29 to the class
3 classes with 30 to the class

Most of these large classes are the "E" classes.

At the end of the tenth week of the fall term the teachers were asked to hand in a very definite statement of the difference in the amount of work done up to that time in the various classes and also the amount expected to be completed by the end of the term. The results indicated the same difference in work by the different groups as was reported for the first term. Some of these reports follow:

An algebra teacher says: "The 'E' groups do all drill, the 'G' classes leave out the hardest of the drill problems, approximately fifteen per cent less than the 'E' group. The 'F' group does about 25 to 30 per cent less than the 'E' group."

A geometry teacher reports: "All classes in geometry do the same work as far as the propositions are concerned. These are essentials and must be mastered by all. The 'F' and 'G' classes do not do as many originals as the 'E' classes. Their original work is adapted to the ability of the class and as far as possible to the ability taught more concerning the propositions. 'E' of the individual. The 'F' classes are also and 'G' students do not need so much help—in fact, 'E' pupils are bored with so much teaching." Another says: "The 'E' class does 25 to 50 more originals than the 'F' class."

We received the following in regard to English 1: "The 'G' class will complete the work of the term by the end of the term. The 'E' class will have accomplished the following in addition to the required work: One hundred lines of memory work, two days on oral composition, two written compositions, one original poem, instruction in verse form, complex sentences usually assigned to English 2, analysis and diagramming of complex sentences, and general enrichment of the class work."

In English 5: "The following additional work is to be taken in addition to that outlined in the syllabus: 'The Nun's Priest's Tale from Chaucer, Two Cantos of Spenser's Fœrie Queen, all of Everyman, all of Brome's Abraham and Isaac, all of the Second Shepherd's Play, and presentation in auditorium of selected scenes from Julius Cæsar."

A Latin teacher says of an "E" class: "More drill work both oral and written than the 'F' class." Another Latin teacher says of a very good 'G' class: "They have done more classroom drill and have written extra sentences and have taken more derivatives than the other divisions have covered."

The longer I work on this plan the more possibilities I see in it. At the end of the first quarter last fall I asked the teachers to hand me in a list of the "misfits"—that is, the names of any students who were doing "F" work in an "E" class, or "E" work in an "F" or "G" class. Several names were handed in and the programs of those students changed so that they would be in classes more suited to their ability. According to the reports of both teachers and students, these changes resulted in an improvement in the work of the school. One teacher had three classes of English 1. They were badly mixed, one class especially having eight students who were doing "E" work and six others who were failing because of lack of knowledge of grammar. After the adjustment was made there was one class of "E" students and very high "G's," a class of "G's" and "F's," and a third class of those who were practically failures. An almost similar adjustment was made in Latin 1 and French 1. Needless to say the work was much better in all the classes.

One or two points have been discovered as we have gone along with the experiment. The first is in regard to the teacher's program. No teacher should be given a single class in a subject unless it is absolutely necessary. Those teaching six periods should have three classes in a subject; those teaching five periods should have a three-two schedule. Students should be transferred from one section to another whenever the work of the student warrants it. In transferring from one class to another much better results will usually be obtained if the student does not have to change teachers. If a teacher has an "E," "G," and "F" class in a subject, it will seldom be necessary to change teachers.

Another reason is that this plan requires more preparation on the part of the teacher. All the teachers say the lesson cannot be presented to an "E" class in the same manner that it is presented to an "F" class. This is not at all surprising when one gives it a little thought. As a result, although the teacher may be teaching only two subjects, she will have four or five preparations. A teacher who does not recognize this fact and make proper preparation, will not be a success with this plan.

At the start it was thought that the "F" classes would be such a bore that no teacher would want to teach "F" classes. It has not worked out that way. In the first place, "F" students have recited under this plan who had never attempted to recite when in mixed classes. In the second place the teachers soon learned that more teaching was necessary and prepared for it. The smaller numbers in a way compensated for the difference in the work to be done. There were not so many papers to be looked over and corrected. Some teachers are better for "F" classes and others better for "E" classes.

This plan will also require that the teachers be more careful in their estimate of a student's ability. Teachers will have to begin to study the individuality of the different students in their classes; in other words, they will have to begin to teach certain boys and girls instead of Latin, or English, or history. It will also require that the principal be alert in his supervision to see that the teachers are making an earnest effort to meet the needs of each class.

This plan was started to give more recognition to the better students in the school—not only brilliant ones but those who were hard workers. It was felt that it was just as important for the brilliant pupil to learn the value of hard work and to learn to work hard as it was for the slow student. Many a good student has been ruined in the past because he has been in classes that were so stupid that the good student lost all incentive to work. At the end of the four years the brilliant student was nothing but a loafer. A school organized and worked on this plan will not only stimulate the bright students as it should, but it will also give help to all in the school for each will be given what he or she most needs. It is an effort to put the needs of the student above the program; we have been slaves to the program too long.

The results given above would indicate that the "E" student could complete the high school in three and one-half years or less. We think it would be a mistake to attempt this. We tried

(Concluded on Page 70)

E 6		H 8		L 3		S 5	
Original	Revised	Original	Revised	Original	Revised	Original	Revised
1 2 E	17 F	1 5 E	1 E	1 11 E	1 E	1 5 E	1 E
3 G		12 G	21 G	6 G	21 G	and	
11 F		2 F		2 2 E	16 F	2 18 G	23 G
2 2 E	16 G	2 6 E	22 G	9 G		2 F	
4 G		18 G	1 F	6 F		1 U	
12 F		1 F		3 4 G	14 F	1 10 G	3 G
3 3 E	18 F	3 4 E	11 G	9 F		and	
9 G		15 G	8 F	9 U		2 8 F	10 F
3 F		6 F		6 2 G	17 U	7 U	10 U
3 14 E	22 E	4 23 E	26 E	10 F		3 7 E	5 E
8 G	1 G	5 G		8 U		and	
5 3 E	1 E	3 7 E	13 E	7 4 G	17 G	4 14 G	18 G
12 G	22 G	14 G	13 G	9 F		2 F	2 F
8 F		2 F		9 U		2 U	
5 9 G	20 F	6 18 E	25 E			6 12 E	18 E
16 F		1 G				and	
6 6 E	7 E	7 9 E	1 E			7 6 G	6 G
7 G	16 G	29 G	23 G			2 F	
5 F							
7 10 G	6 G						
15 F	15 F						

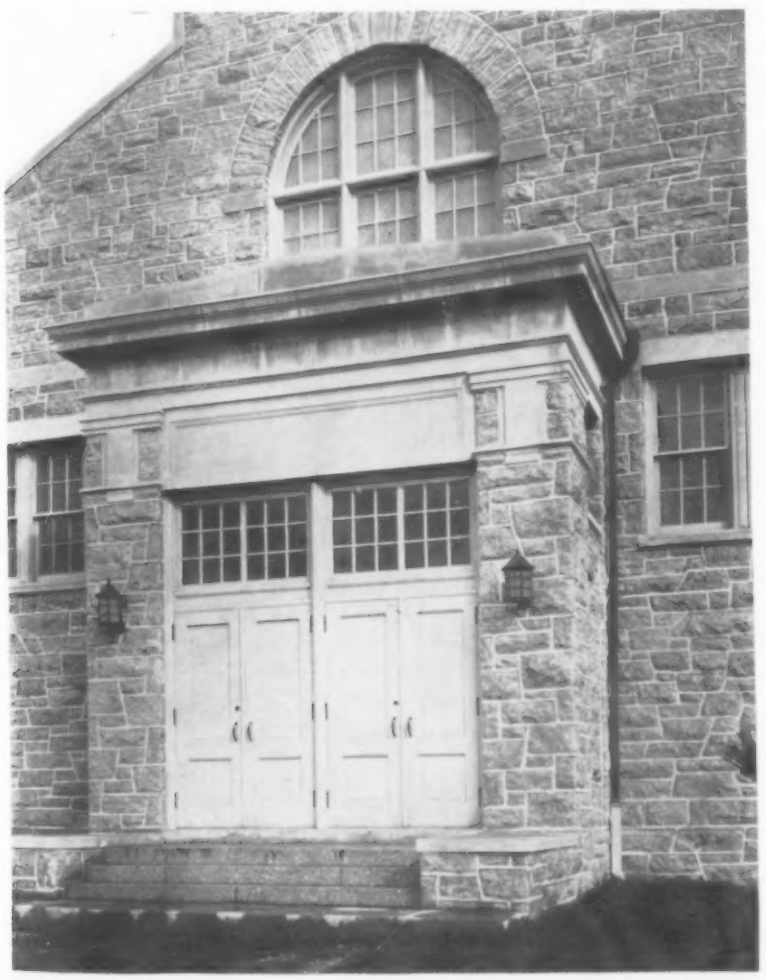
HAVERFORD TOWNSHIP HIGH SCHOOL, HAVERFORD, PA. Boyd, Abel & Gugert, Architects, Philadelphia, Pa.

THE NEW HIGH SCHOOL BUILDING FOR THE SCHOOL DISTRICT OF HAVERFORD TOWNSHIP

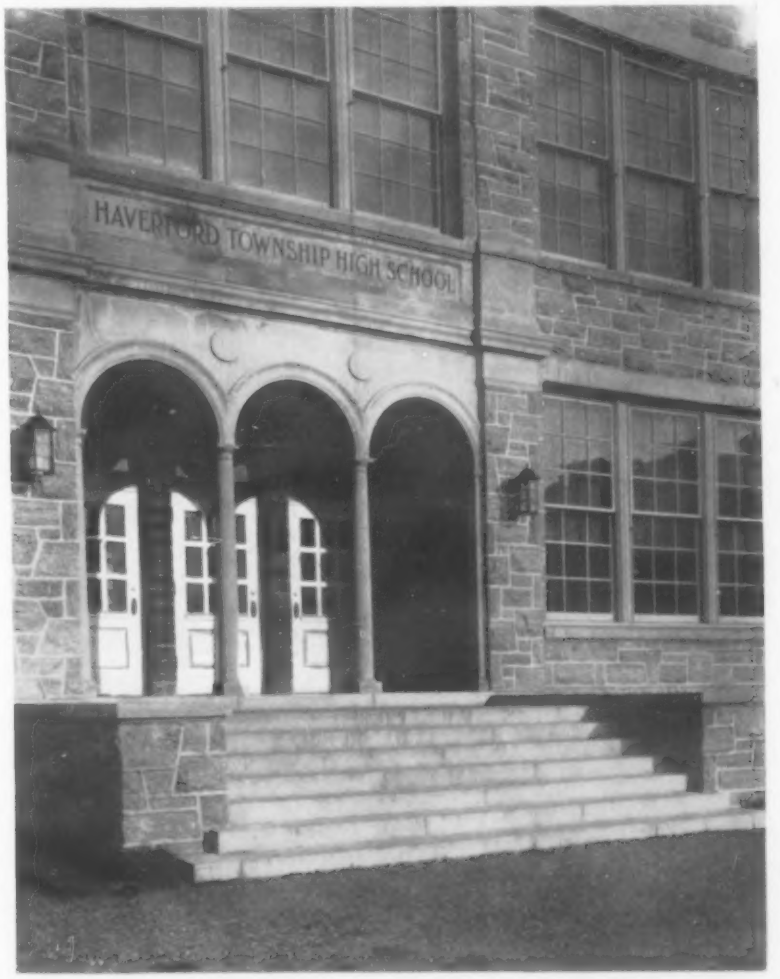
The school board of the school district of Haverford Township, of which Mr. William J. Serrill is president and Mr. Joseph W. Huff is superintendent of schools, has just completed a large new high school building on a tract of ground on the Coopertown and Darby Road near Mill Road, South Ardmore. This new structure gives Haverford Township a thoroughly modern and complete high school building.

In designing the structure, Boyd, Abel and Gugert, of Philadelphia, the architects for the school board, took into consideration that it is to serve for the administration of the schools of the entire rapidly growing township and that it must also be arranged for the general use of the community to which it belongs.

The plan of the building is a flattened U, with the open end toward the front, forming a wide entrance fore court. On one side of this court is the auditorium, built with a sloping



DETAIL OF SIDE ENTRANCE, HIGH SCHOOL, HAVERFORD, PA.



DETAIL OF MAIN ENTRANCE, HIGH SCHOOL, HAVERFORD, PA.

AUDITORIUM AT THE HIGH SCHOOL, HAVERFORD, PA.

floor, having a seating capacity of 750 people. The stage toward the main building, is very large, as necessary for graduation exercises, plays and community use, and has space for seating another 250. There are separate dressing rooms and both the stage and auditorium are connected with the main building so that the corridor and the classrooms could be used, if required, for special dressing rooms on the occasion of elaborate plays or large gatherings or exhibitions.

At the opposite side of the fore court is the gymnasium, the main room of which is 55 feet by 90 feet, sufficient for a large sized basket ball court and for class drills, exercises, dances, community athletic events, etc. In the rear of the gymnasium are separate dressing and toilet rooms for boys and girls, as well as for men and women teachers, a storage closet and an office. Over the dressing rooms is a balcony with a sloping floor with perfect vision for the seating capacity of a minimum of 250 people. The width of the room also enables the placing of chairs along the side walls during basket ball games and general events.

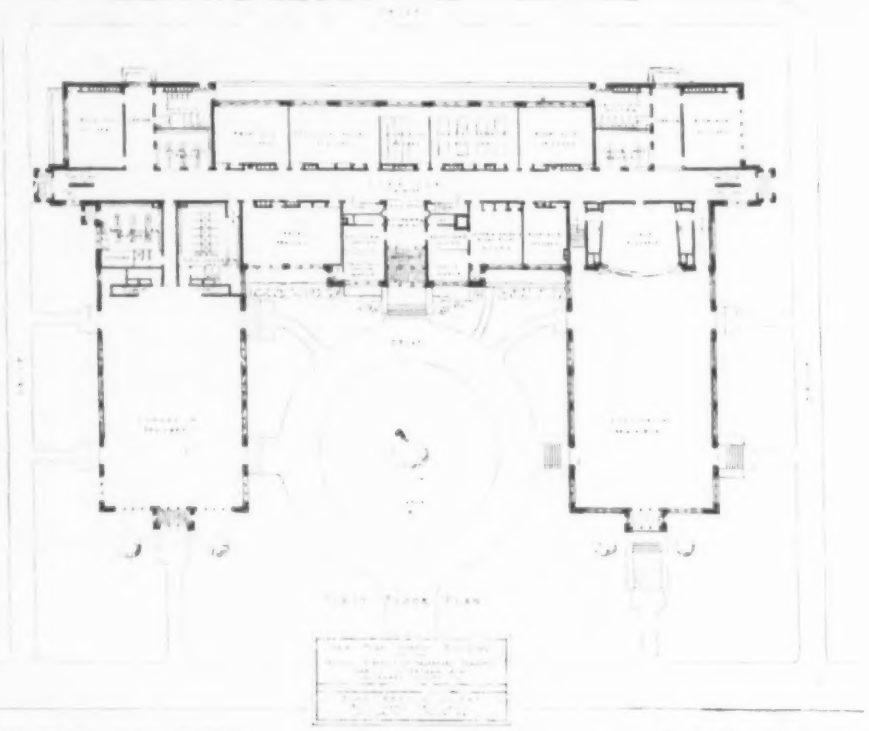
Both the auditorium and gymnasium have separate entrance vestibules opening directly from the main street front. Both are, however, directly connected with the classroom portion for convenient and constant use of the pupils, but in such a way that they can be completely cut off when it seems desirable after school sessions. Both have emergency exit doors at each side of the large rooms opening onto roads, with modern panic bolts on the doors. The mechanical equipment is so arranged that either or both of the wings may be lighted or heated separately and independently of the classroom portion.

The main school portion of the building forms the closed end of the U, stretching along the entire rear, including behind the auditorium and the gymnasium and beyond on either end, at which point are the childrens' entrances.

The main entrance to the school portion is at the front from the fore court. The approach is up a short flight of granite steps, through an open porch and then into a closed vestibule, both of which also have tiled floors and high tiled wainscoting. The vestibule opens directly into the lobby, from which on one side is the entrance to the township school administration offices. These consist of a reception space separated from the clerical office space by a counter, both of which open directly into the superintendent's and board room. In the outer office is the master clock, telephone switchboard, etc. The superintendent's office contains large closets and a fireproof vault. At the opposite side of the lobby is the office of the principal of the high school, which has its own separate waiting space.

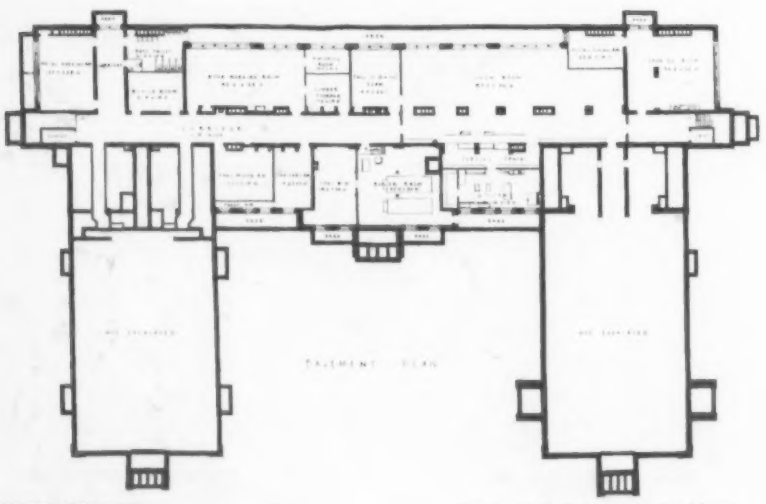
The lobby has a cement floor with tile wainscoting. This corridor extends the full length of the building from the boys' and girls' entrances a distance of over three hundred feet, on both the first and second floors. The corridors and stairs have cement floors and are wainscoted five feet high with a smooth surfaced hard glazed tile which resists pencil marks, scratches, etc. Drinking fountains are placed along each corridor in niches. Wide arches open directly into separate girls' and boys' locker spaces which are thus brought under direct administrative control. From these locker spaces access is gained to the toilet rooms.

The first floor of the school portion contains a large library with built-in bookcases in



FIRST FLOOR PLAN, HIGH SCHOOL, HAVERFORD, PA.

Boyd, Abel & Gugert, Architects, Philadelphia, Pa.

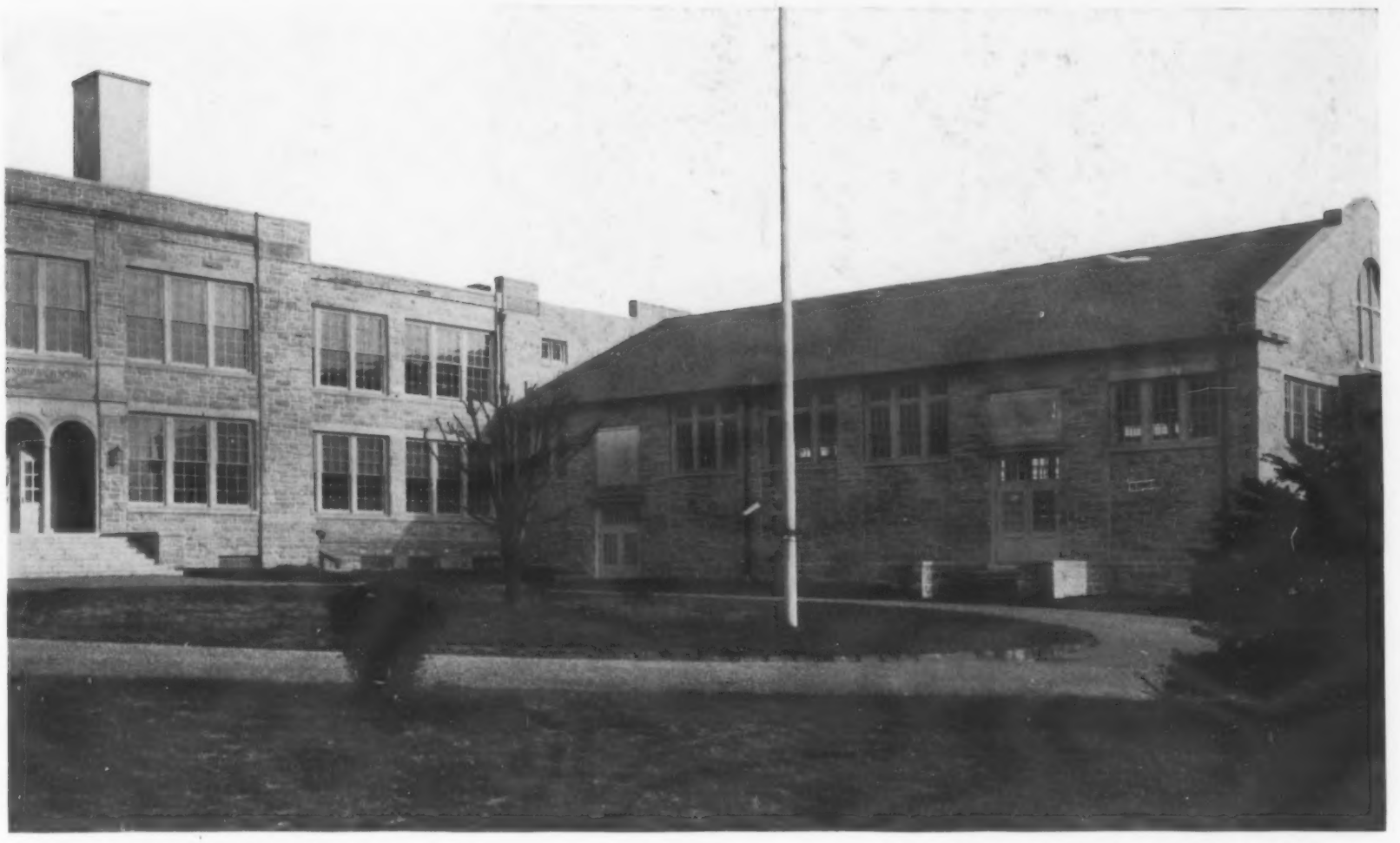


HIGH SCHOOL, HAVERFORD, PA.

Boyd, Abel & Gugert, Architects, Philadelphia, Pa.

HIGH SCHOOL, HAVERFORD, PA.

Boyd, Abel & Gugert, Architects, Philadelphia, Pa.



HIGH SCHOOL, HAVERFORD, PA. Boyd, Abel & Gugert, Architects, Philadelphia, Pa.

recesses, chemical and physical laboratories and lecture room with steep stepped seats. There are also several large and small general classrooms and large and well-lighted boys' and girls' toilets with separate compartments for teachers. The children's toilets are all entered through screened vestibules.

In the second floor in the center of the front is a large and well lighted drawing room with separate office and store room. There are also large music and sewing rooms, a commercial department arranged in a group, separate large and small classrooms for the English department and other special and general classwork, a dispensary and dental room, separate mens' and women's teachers' rest rooms, a large storage room as well as several smaller ones with complete shelving for supplies, and of course, all of the toilets just as on the first floor. The second story also gives access to the gymnasium balcony.

Communicating stairs are placed in the center and at each end of the school portion, but only the end stairs give access to the basement, which contains a large cooking room at the girls' end and at the boys' side a large wood shop with separate finishing and lumber storage rooms, a large metal working room and a boy's toilet. There is also the main lunch space for the pupils, in which are sliding seats at the tables so arranged that the floor is clear of obstructions for washing purposes. The kitchen for the lunch has every modern facility and equipment, with electric dish washer and potato peeler, gas ranges, pot sinks, pan racks, large store room for general supplies, dressers for dishes, etc. The serving space has a steam table, pastry counter, ice cream box, with plate racks, silver boxes, drinking water basin and racks for glasses, shelving for used dishes, etc. There is also a private lunch room for the faculty, convenient to the lunch space.

In addition to all of the above, the basement contains the necessary boiler room for the return tubular boilers, coal storage for over one hundred tons, ash hoist equipment and separate fan room for the fresh warmed and cold air equipment and a janitors' room in which is placed the main electric service and panel boards.

The heating system is of the highest type of vapor installation with all rooms heated with fresh air drawn directly from the outside through a cold air room, the temperature of the air controlled by thermostats. Each room has also a vent for foul air leading through flues to the vent stacks over the roof and discharging into the outside. Each room also has direct radiation under the windows to take care of the cold air at each glass area.

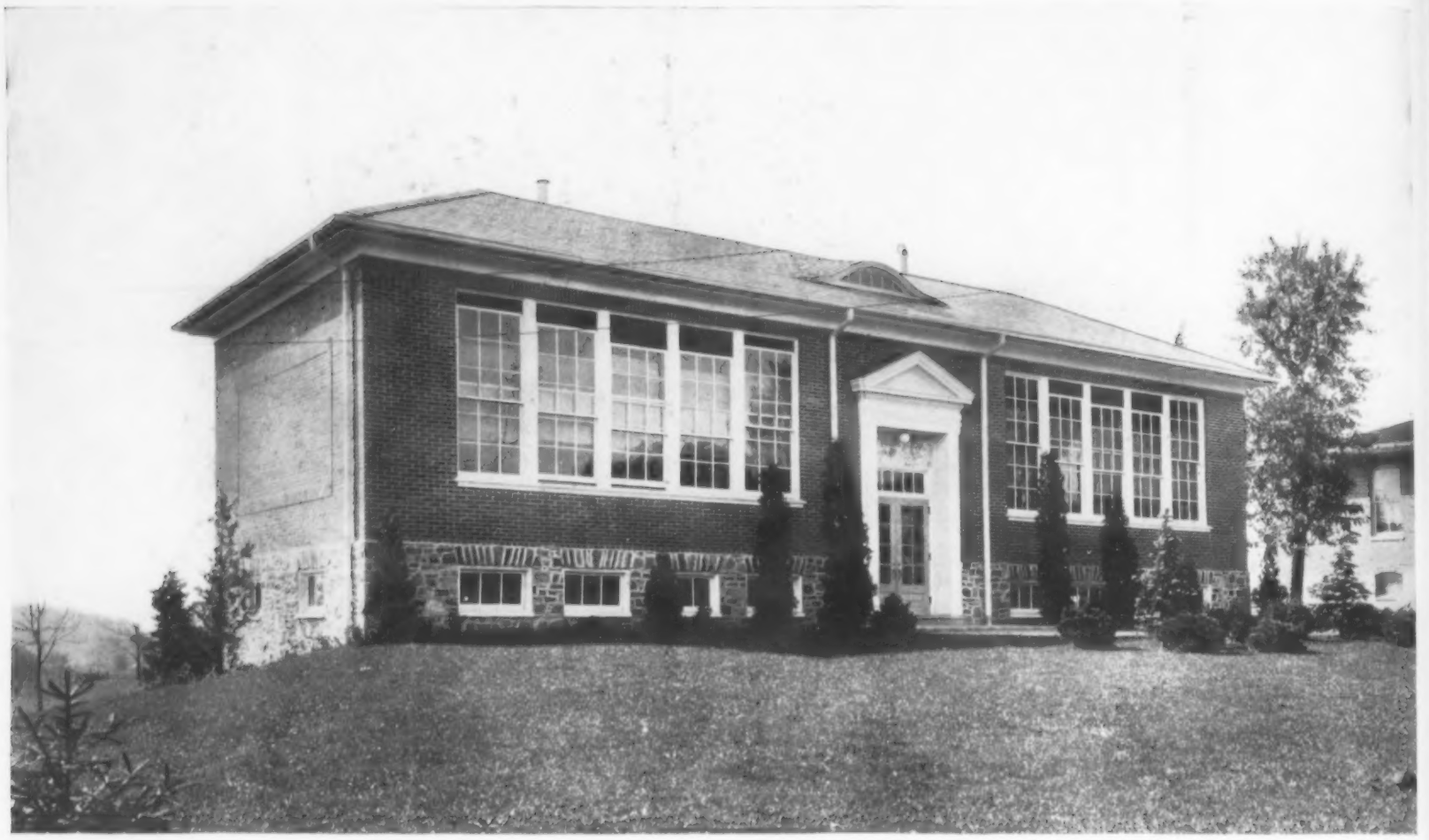
The plumbing is of the most modern type, with quick acting flushometer valves on each toilet, slate wash basins in the mechanical departments, soapstone basins in the laboratories where acid is used, sanitary drinking fountains and a separate system of acid drainage from laboratories in acid proof pipe.

The electric lighting is sufficient in extent for use of the building for night school work if required and for use of the gymnasium and auditorium by night. There is a complete system of intercommunicating telephones, reaching to all rooms and also a master self-winding clock with secondary clocks in the various rooms, a program clock to automatically ring

(Continued on Page 131)

DOMESTIC SCIENCE CLASS, HIGH SCHOOL, HAVERFORD, PA.

TYPICAL CORRIDOR AT THE HIGH SCHOOL, HAVERFORD, PA.



PENN SQUARE SCHOOL, EAST NORRITON TWP., MONTGOMERY CO., PA. C. E. Schermerhorn & Watson K. Phillips, Associate Architects, Philadelphia, Pa.

A RURAL SCHOOL

The Penn Square school illustrated on this page has been planned to meet a special condition that is rather interesting. The building was erected by the School District of East Norriton Township, Montgomery County, Pa., on a splendid site owned jointly by the school district and a local community organization. On the same property there is a building which contains three classrooms on the first floor and a community hall on the second floor. School is being conducted in the old building, but as the district acquires funds the new building is to be added to as shown in the floor plans, and the old building is to be abandoned for strictly instructional purposes and is to be devoted entirely to community and assembly uses. The old building will provide the assembly hall for the school.

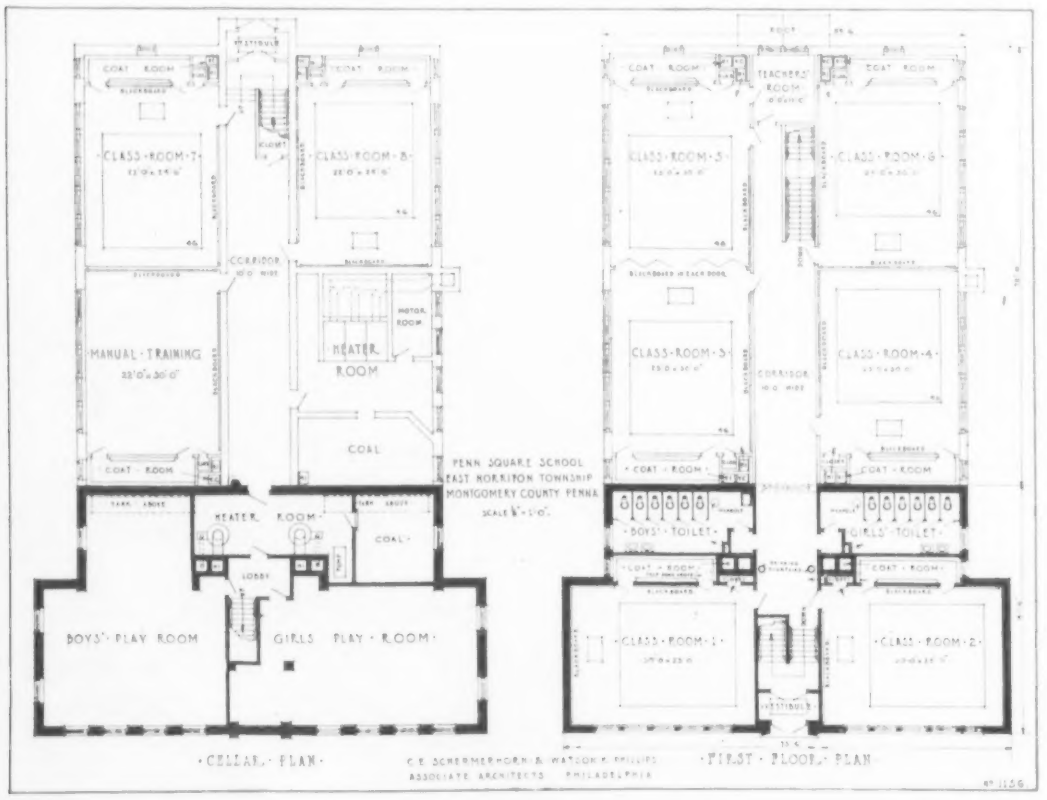
The Penn Square school building is constructed of local stone and of local and dark red shale brick. The roof is of black slate. In the basement there are playrooms, a heater room, and space for coal. The heating and ventilation is at present provided by means of two furnaces, but will later be replaced when the building is extended and a central heating and ventilating system is installed.

On the first floor of the building there are two standard classrooms, with coat rooms and separate toilets for boys and girls.

The building is located on a slope so that the rear of the basement will be entirely above ground and a manual training shop and two classrooms can be provided on the present basement level. On the first floor there are four additional classrooms with coat rooms. The plan is to put a rolling partition between two of the classrooms so that these can be thrown together for work in which more than one class will be interested.

The building has complete plumbing and sanitary installation, and drinking fountains are provided in the corridors.

The grounds surrounding the building have been planted through the generosity of a local citizen, Mr. Adolph Muller, who is a member of the board of education. The architects are C. E. Schermerhorn and Watson K. Phillips of Philadelphia.



FLOOR LOADS IN THE DESIGN OF SCHOOL BUILDINGS

The Building Code Committee of the United States Department of Commerce has recently issued the results of a nation-wide study of the problem of minimum live loads allowable in the design of buildings. The study included not only home buildings, factories, and stores, but also various types of special structures, including school buildings, hospitals, and libraries. The results of the study are of interest in suggesting standards for architects and minimum requirements for state and municipal building codes.

Minimum Floor Load Requirements of School Buildings

Minimum Load	Classrooms	Assemblies	Corridors
40	3	...	...
50	10	...	1
62.5	1	...	...
70	9	2	7
75	41	12	13
80	3	7	11
90	5	26	26
100	1	23	18
105	...	3	...
115	...	1	...
120	...	7	7
125	1	15	7
150	1	4	3

According to the study of the Committee, an analysis of the requirements of 109 representative cities, a total of 101 cities have adopted minimum floor load requirements as a basis of structural design. In 86 cities an average floor load requirement of 69.9 pounds is made.

(Concluded on Page 136)

CENTER SCHOOL, MORRIS, ILL. Arthur L. Pillsbury, Architect, Bloomington, Ill.

NEW CENTER SCHOOL AT MORRIS, ILLINOIS

By K. C. Merrick, Supt.

The new Center School at Morris, Illinois, is essentially an elementary school but unusual in the fact that it also largely serves the high school pupils and functions as a community center.

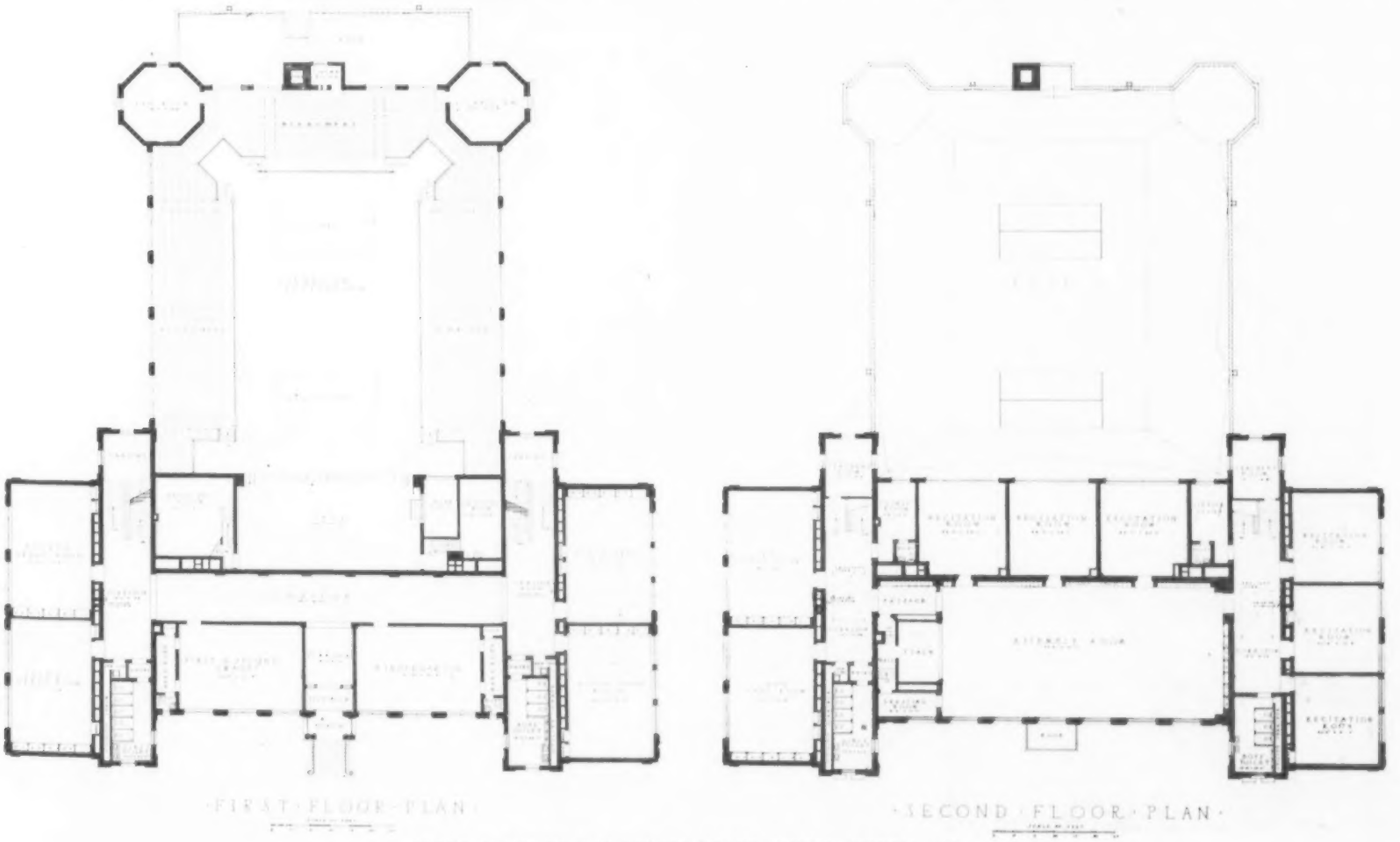
Morris is a typical mid-west city of 5,000 population, situated in what is predominantly an agricultural county but having a number of good manufacturing concerns.

In this state there are two distinct types of school districts, the unit and the dual. In most cities of Illinois of this size there is a township or community high school under a board of education separate from that which governs the elementary schools.

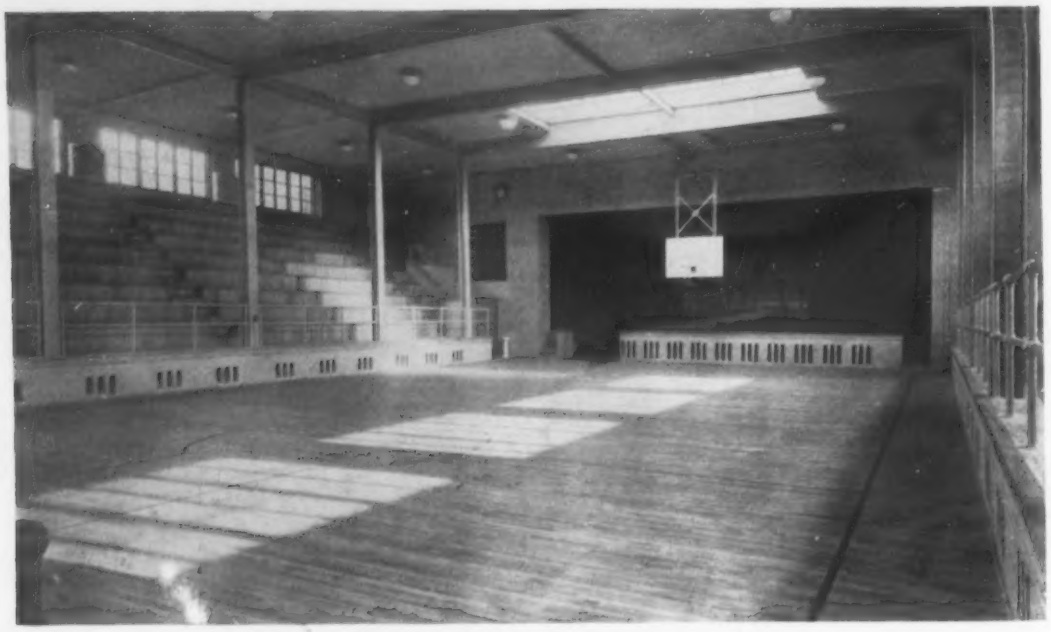
Morris is a unit district with all schools under one board. Of recent years the high school building has become congested, but is far too modern a structure to abandon and cannot be added to because of ground restrictions. The Center School grounds are but one block from the high school and it was considered advisable to include in the new Center building facilities to meet the increasing needs of the high school. The Morris school district comprises an area of about two square miles. There are three small outlying elementary schools, none having pupils beyond the fourth grade. The Center building, which is actually the geographic center of Morris, houses all pupils above the fourth grade and a fair portion of those below this grade.

The general type of the building is colonial and the materials are brick and Bedford stone. In order to give a generally low effect the ground floor is about three feet below level, necessitating a window area in front where there is a low terrace. Besides the ground floor there is a main floor and upper floor. The large wing in the rear consists of a combination gymnasium and auditorium, together with the boiler room.

The gymnasium does not have running track or balcony but resembles a miniature stadium with stadium-type seats surrounding on three sides a floor 76x46. At one end is a stage 46x22. The seating capacity of this room as a gymnasium is 950 and as an auditorium 1450. Beneath all stadium seats are locker rooms. There are special rooms provided for men of the community and for women's classes as the building is being used much as a community gymnasium, being open each evening for different groups. Over the west section of the stadium is a fire-proof cinema booth. At the



FLOOR PLANS OF THE CENTER GRADE SCHOOL, MORRIS, ILL.
Arthur L. Pillsbury, Architect, Bloomington, Ill.



GYMNASIUM, CENTER SCHOOL, MORRIS, ILL.

left of the stage is a large pipe organ donated by one of the local churches which had federated with another church. On each side of the stage are the usual dressing rooms and to the right a serving room provided with gas range, sinks, cupboards, etc., which is designed for use in connection with school parties and community banquets. There are two ample lobbies and ticket offices at the corners of the auditorium to rapidly take care of large crowds.

The ground floor of the main building is given over to a cooking laboratory, pupils' lunch room, woodworking, storage and lumber rooms, a drafting room, primary children's play room and a community room 38x50. This community room is provided especially for meetings of various civic organizations such as women's clubs, music clubs, parent-teachers' association, etc. There is a small stage at one end with a dressing room and storage room. At the other end is a large fireplace with a heavy oak mantel piece. This room is being provided with suitable rugs, chairs, and drapes, a considerable amount of the expense being met by local civic organizations who meet in this room. On the main floor there are a kindergarten room, primary rooms and other typical elementary schoolrooms. The usual intermediate room has coat rooms of the vanishing-door type, while in the primary and kindergarten rooms there is a separate room provided with adjoining toilet facilities.

With the exception of two sixth grade rooms at the extreme south, the entire upper floor is given over to the departmental school, grades seven and eight. There is a large, attractive study hall and assembly with seating capacity of 200. At the front is a small stage with dressing room. Built-in bookcases are provided at the back of the room with study tables. Along one side are recessed lockers. The entire room is furnished in a pleasing shade of light cream enamel. The ceiling being high and arched gives the room a particularly pleasing effect. Opening from this study hall are three recitation rooms on the west and three more recitation rooms just across the corridor. These rooms are equipped for science, music, etc.

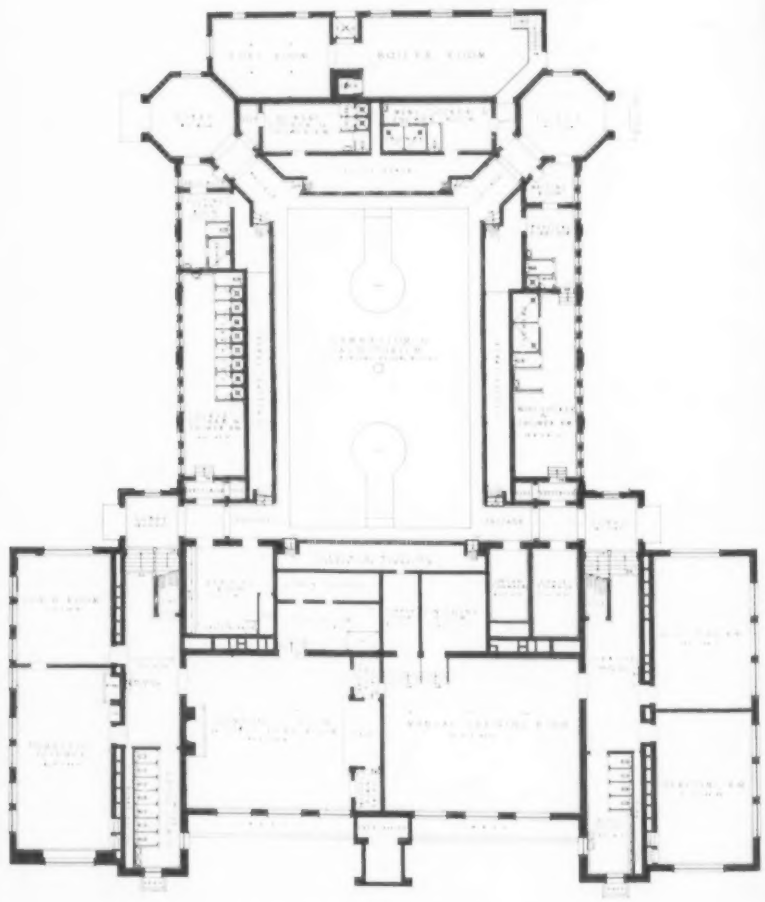
An electrically controlled program clock with four circuits governs bells in the departmental school, in the other rooms and the playground gongs.

Electrical connections placed advantageously about the building provide facilities for vacuum cleaning. The woodwork throughout most of the building is oak, finished in "French gray," which makes a very pleasing contrast with the tinted plaster, a light cream shade. All corridors, stairs and the floors in toilets, locker rooms and rest rooms are of terrazzo.

The classroom portion of the building is heated by direct radiation using an electrically operated vacuum steam system of circulation. There is a plenum system of sufficient capacity for the classrooms under full occupancy, and provision for alternate use as a supply for the gymnasium-auditorium. This division of the building is ventilated by an exhaust system through the locker and toilet rooms and may be supplied with fresh air from the windows or from the mechanically equipped classroom portion of the building. In the heating plant there are two 60″x15′ 3″ smokeless, down draft, low pressure type boilers.

(Concluded on Page 132)

TOP—STUDY HALL; BOTTOM—COOKING LABORATORY. CENTER SCHOOL, MORRIS, ILL.



SECOND FLOOR PLAN

CENTER GRADE SCHOOL, MORRIS, ILL.
Arthur L. Pillsbury, Architect, Bloomington, Ill.

W. O. MARSHALL SCHOOL, JOLIET, ILL.

Ashby, Ashby and Schulze, Architects, Chicago, Ill.

FLOOR PLANS OF THE W. O. MARSHALL SCHOOL, JOLIET, ILL.
Ashby, Ashby and Schulze, Architects, Chicago, Ill.

THE MARSHALL ELEMENTARY SCHOOL, JOLIET

H. Ambrose Perrin, Supt.

The new A. O. Marshall elementary school which has just been completed is an attempt to produce a flexible unit type of building. The specific reason for suggesting this particular type of construction is that the building is located in a rapidly developing new section of the city where the ultimate needs are very difficult to forecast. The success of this type of structure is very apparent when one considers the unusual demands which are continually being placed upon almost every school in every neighborhood of the city.

The idea is that the building should contain standard size units, no matter what purpose they may be used for. Each unit theoretically should contain its own heating, ventilating, and lighting systems. The units in themselves should be standard size, but any divisions of the units should be flexible so that their use may be changed with a minimum of expense in terms of money, time, and energy.

The term flexibility applies not only to the possible reconstruction of the units for different uses, but it also applies to the planning of a building whereby it may be materially extended when the need for more classrooms becomes evident. This gives the building plan all of the advantages of the construction of a large modern building, without the need of building any more at a given time than the finances and apparent needs may warrant.

The school which is here described is an initial attempt in this city to build an absolutely fireproof building which shall be of the flexible unit type. Actual construction somewhat modified the type plan, but the essential principle remained.

The Marshall school building is of two stories, with the exception of the extension of the center toward the rear which is one and one-half stories to accommodate a combination auditorium-gymnasium. The building is of brick with stone trim. It is as absolutely fireproof in construction as it is possible for a school building to be.

As shown in the accompanying picture, the main floor of the building is reached with but a single step from the front sidewalk. This provides for ease of entering and leaving the building, and for an elementary school (kindergarten through sixth grade) intended for young children, this is thought to be a decided advantage.

There is no basement. A man-size tunnel leads around the inside of the building for the purpose of accessibility to steam and water pipes. Other than this the only excavation is for furnace and coal. All rooms, for any purpose whatever, are thus above the level of the ground and have full opportunities for proper lighting and ventilation. Incidentally, the lack of basement rooms has eliminated a considerable percentage of expense which ordinarily accompanies the construction of school buildings.

(Continued on Page 131)

CORRY JUNIOR HIGH SCHOOL, CORRY, PA. W. G. Eckles Co., Architects, New Castle, Pa.

THE CORRY JUNIOR HIGH SCHOOL BUILDING

The citizens of Corry, Pa., believe that in the new junior high school, which was put in operation during the past winter, they have a building which is rendering one hundred per cent school value for the money invested. The structure is the result of community efforts in which not only the superintendent of schools and his assistants and the board of education took an active part, but in which the entire community rendered aid and support.

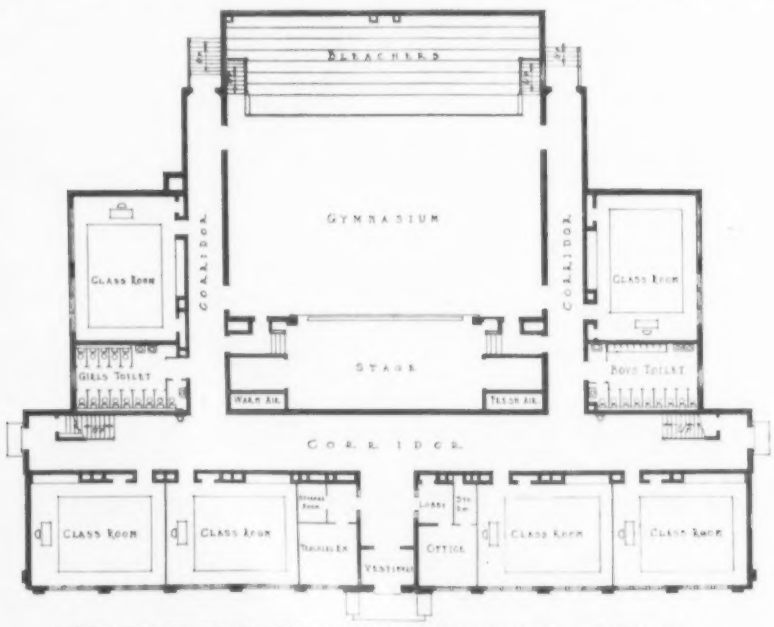
The building was made possible by a bond issue of $175,000, voted November 6th, 1922. The project was delayed for a brief time, but in 1923 the plans were drawn by W. G. Eckles Co., Architects, New Castle, Pa., and bids were opened and contracts awarded January 2nd, 1924. The building was ready for occupancy in January, 1925.

Under the Pennsylvania building code, the structure is of type C slow burning construction. The building is constructed of brick, limestone trimmings, and concrete. No attempt has been made at ornamentation; the design has been kept simple and the architectural embellishment has been limited to the front entrance.

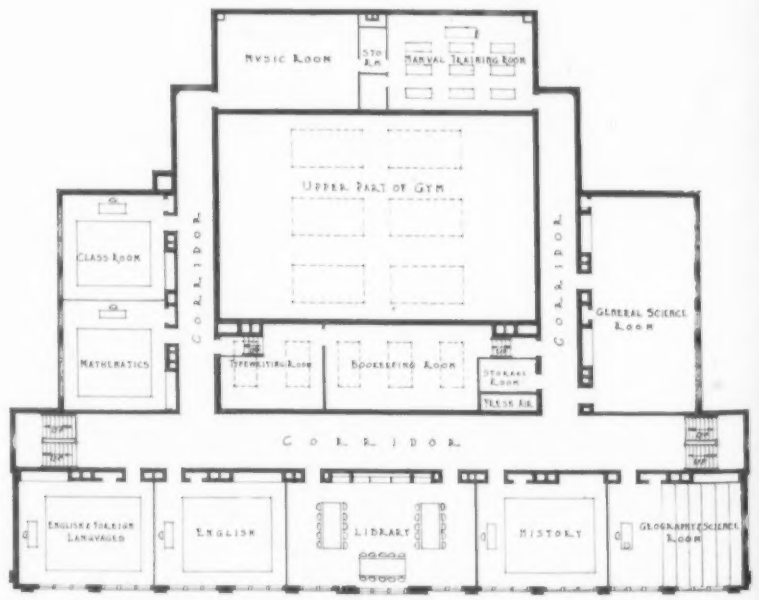
The building is without basement, except for space for heating and ventilation. On the first floor there are six standard classrooms, each lighted from one side, and equipped with built-in wardrobes. Adjoining the front entrance there are administrative offices, retiring rooms for the teachers, and storage rooms. The combined gymnasium and assembly room contains a large stage, ample for all school entertainments and lectures. The room is so arranged that it can be used for all physical activities and will serve for indoor games, etc.

On the second floor there are five standard classrooms, a suite of rooms adapted to business subjects, a library, a general science laboratory, and a science lecture room. Space above the bleachers in the gymnasium is given over to a manual training room and a music room. The manual training shop is only temporary in character and an adjoining building is used for the industrial arts work.

The building at present houses not only children for the first six grades for the territory immediately surrounding, but also the entire



FIRST FLOOR PLAN, CORRY JUNIOR HIGH SCHOOL, CORRY, PA.
W. G. Eckles Co., Architects, New Castle, Pa.



SECOND FLOOR PLAN, CORRY JUNIOR HIGH SCHOOL, CORRY, PA.
W. G. Eckles Co., Architects, New Castle, Pa.

enrollment in the junior high school for the entire city.

The building has a cubage of 582,820 cubic feet and cost 28.8 cents per cubic foot. Including the site and the equipment installed, the building cost 29.4 cents per cubic foot. The cost per child was $293.83.

MRS. MAUDE H. BARNES,
President of the Board of Education,
Corry, Pa.

A description of the building would be incomplete without recognition of the very efficient services of Mr. H. E. Hanley, business manager of the board of education, who shouldered the entire responsibility of the details of the bond issue and of the supervision of the construction of the building. Assistance was also given the board by Mr. Hubert C. Eicher, of the Pennsylvania state department of public instruction. Mrs. Maude H. Barnes, president of the board of education, gave almost her entire time to the school project from the time of its inception until the time of its dedication. Mrs. Barnes is serving her second year as president of the board of education. The educational aspects of the problem were handled by Mr. A. Earle Hemstreet, superintendent of schools.

A. EARLE HEMSTREET,
Superintendent of Schools,
Corry, Pa.

H. E. MANLEY,
Secretary and Business Manager, Board of Education, Corry, Pa.

The Vocabulary of a History Text

Jesse L. Ward, Superintendent, Bucyrus, Ohio, and Dr. P. R. Stevenson of Ohio State University

The ability of pupils to read history texts and comprehend the meaning of the author is dependent, in a large degree, upon the vocabulary difficulty presented. However excellent may be the method of presenting the subject matter, inadequate attention given to the meaning and use of any words soon causes the interest of the children to dwindle. Adults cannot become absorbed in the reading of a treatise for which an understanding of technical terms indispensible to its understanding is lacking. Likewise, it is true that children cannot be expected to maintain a continued interest in the history of the early period of America when they are not taught the meaning of such words as circumnavigate, colonization, indentured, despotism, etc.

It is quite possible that textbook writers have not taken sufficient consideration for the age of the pupil for whom they write. In so far as a careful selection of the reading vocabulary is concerned, it is true that they cannot avoid entirely difficult words which are an essential part of the subject matter. Simplification of the thought expressed, however, should be given careful attention.

The aim of this paper is to determine the vocabulary used in a modern history text and to compare it with the vocabulary of general reading. A study was made listing the actual frequencies of each word used in the first 106 pages of a recent history text. These pages were devoted to the period of discovery, exploration and colonization of North America. This part of American history is generally outlined as part of the course of study for the seventh grade. The mechanics of recording frequencies of the large number of words occurring involved the problem of devising a plan to handle a number of cards arranged in alphabetical order so that a minimum amount of time would be spent in finding and scoring each word. For each letter of the alphabet a large piece of cardboard (6 inches by 3 feet) was used. To each of these pieces 3"x5" cards were fastened by means of strips across their lower corner. The cards could thus be slipped into their proper place when the addition of a new word made it necessary. By exposing only the upper one-fourth inch of each card a large number of cards could be used on each strip of cardboard. Each word had an individual card and a mark was recorded for each time the word occurred.

By this method it was possible to determine the exact number of times each word occurred. For example, the word "the" appeared 3,150 times. Table I shows the frequencies of the ten most common words.

TABLE I. Frequency of Words Occurring More than 200 Times

Word	Frequency	Word	Frequency
The	3,150	Who	212
In	1,007	Was	263
Of	1,288	A	386
And	507	Were	321
To	636	By	295

In the 106 pages there occurred 2,912 different words which were used 23,912 times. In Table II the number and per cent of words with their frequencies were recorded. It will be noted from this table that (a) 1,542 or more than 50 per cent of the words appeared once; (b) only .0002 per cent of the words occurred as many as 3,000 times; and (c) 2,507 or 90 per cent of the words occurred nine times or less.

TABLE II. Number and Per Cent of Words with Their Frequencies

Frequency	Number of words	Per Cent of words	Frequency	Number of words	Per Cent of words
3,000-4,000	1	.0003	50-99	31	1
1,000-3,000	2	.0007	25-49	54	2
500- 999	2	.0007	10-24	189	7
400- 499	0	0	5- 9	282	10
300- 399	2	.0007	2- 4	783	30
200- 299	3	.001	0- 1	1,542	50
100- 199	21				

The different words were checked against the Thorndike word list.[1] This was done for the reason that Thorndike's list was the larger sampling from all sources of the most widely used words. He selected his ten thousand words from a count of 4,565,000 words from 41 different sources, including newspapers, books, magazines, and the Bible. We are, therefore, able to compare the frequency of each word as it occurred in the history text with the importance given to it by the investigation of Thorndike.

In such a comparison, however, we cannot say that because a word occurred in the text and does not appear in the 10,000 most commonly used words that it is unimportant as far as history is concerned. Thorndike says: "This list is not a perfect measure of the important words, for two reasons. First, a word may be very important for a pupil or graduate to know and yet not figure largely in the world's reading." Such words, therefore, as proper names, hyphenated words, newly coined words, and others which are the immediate tools of historical expression, are, as a rule, not given in the word book but they are of such importance to the understanding of history that they become essential. It may be that these words should be regarded as the special vocabulary necessary to pupils making a study of American History.

The frequency of history words and their position as given by Thorndike are indicated in Table III.

TABLE III. Frequency of History Words Found in Thorndike's First 5,000 Most Used Words

Frequency in History Text	First 1,000	Second 1,000	Third 1,000	Fourth 1,000	Fifth 1,000
200 and over	10	...	...	...	...
100-199	18	2	...	...	1
50- 99	28	1	1	1	...
25- 49	43	3	5	1	1
10- 24	127	25	14	5	6
5- 9	146	48	22	17	11
2- 4	288	185	85	58	40
0- 1	301	268	215	122	121
Total	961	532	342	204	180

Nine hundred sixty-one words are included in Thorndike's first 1,000 most common words—of these ten occurred 200 or more times; 18 between 100 and 199; 28 between 50 and 99, etc. In the second 1,000 words there were 523 words, in the third, 1,000 there were 342, in the fourth 1,000 there were 204 and in the fifth 1,000 there were 180. In addition to these there were 366 history words found in the second five thousand words and 327 which did not appear at all in the list. A large proportion of these 327 words were proper names. Two hundred forty-eight words were proper names. It will be noted that the words of the history texts used practically all of the first thousand words, about half of the fourth and fifth thousand and approximately one-fifteenth of the words in the second five thousand list.

The list of words occurring in Table IV are examples of the words which did not occur in Thorndike's list. These do not include the proper names. Only one of these words (indentured) occurred more than once.

TABLE IV. Examples of Words Not Found in the Thorndike List (Not Including Proper Names)

Word	Frequency	Words	Frequency
Aggressors	1	Linguistic	1
Ambuscade	1	Nostrums	1
Bivouac	1	Physiognomy	1
Circumnavigating	1	Rudiments	1
Frivolity	1	Silhouette	1
Indentured	5	Subservient	1
Instigated	1	Underwritten	1
Intrepid	1	Vexatious	1

Conclusions

1. The vocabulary necessary for the understanding of history materials contains at least a small per cent of words not frequently used in general reading.

[1]Thorndike, E. L., "The Teacher's Word Book," Teachers College, N. Y.

(Concluded on Page 131)

THE AMERICAN
School Board Journal

WM. GEO. BRUCE
WM. C. BRUCE } *Editors*

EDITORIAL

WHO SHALL CONTROL SALARIES—STATE OR COMMUNITY?

The compensation of the professional workers of a school system has been a subject which has been agitated from every angle for many years. While the question has hinged in the main upon what that compensation shall be, it has in recent years narrowed itself down more particularly in certain states to the placement of the salary fixing authority. Shall the community control, or shall the state exercise an authority over the community in fixing professional compensation?

The issue raised here is largely the result of the abuses of authority which have resulted in the past. Those in charge of the employment of teacher services have not always recognized the equities involved. The law of supply and demand which was applied to the selection of teachers, more particularly in the rural districts, led to some shameful conditions. The dollar mark controlled, and in consequence the cheapest service was engaged.

Minimum wage laws were the inevitable result. Simultaneously with the enactment of such regulations came also the designation of professional standards. This was designed not only to provide economic protection to the teacher, but primarily to protect the integrity of the school. The recognition of the fact that the schools are the concern of the state, and wholly within its control, enabled a correction of the abuse that was being practiced.

The authority of the state has also been invoked in recent years, in revising the salary schedules of city school systems. Thus, certain states have not only fixed the rate of taxation for school purposes, but have determined the minimum schedule that shall apply to the compensation for professional services.

While the accepted idea in all states is to the effect that local authority shall determine salary schedules as applied to the teacher service, it nevertheless remains that the state may exercise its power to fix professional standards and to regulate the compensation that must be met. Where the state has stepped in and told school boards what salaries must be paid, the inference has been that the latter failed in meeting the situation in an equitable manner.

The conclusion must be that the application of the law of supply and demand in the employment of teachers has not been for the best interests of the school. Experience has proven that if competent service is to be commanded, the compensation provided must recognize the true value of that service and the interests of those that are expected to render the same.

It therefore becomes the duty of the board of education to place a proper estimate upon the service to be employed, deal with that service in the light of its value to the community, the state and the nation, and compensate the same in keeping with the dignity of American professional effort.

If the local board of education fails to meet this condition, the state has the full authority to step in and assume control.

WHAT ABOUT STANDARDIZING SCHOOL BUILDINGS?

The subject of standardized school buildings is not new. In fact, it is as old as the hills. It has been debated by school authorities and school architects for many years, and fixed conclusions both as to the advantages and limitations have long been reached.

But, like in many other things in this world, every little while some man comes along with an idea on the subject which he deems new, and which he urges with tenacious enthusiasm and vigor. Frequently the proposed new thing evaporates in the light of calm judgment and reasoning. But, when the new thing, which in reality is shopworn and antiquated, is to be expressed in the form of a law which men must obey, some one will stand up and speak his mind.

Thus, a bill introduced in the Ohio legislature requiring all plans for new school buildings to be drawn by a state architect in order to secure the economies of a standardized article, has attracted some attention. By way of comment, the Xenia, Ohio, Gazette says:

"The plan would standardize school building construction according to each era of ascendancy in political power, make individual school boards subservient to the state department and result in architectural style duplication that would eliminate the beautiful in school buildings."

The Toledo Blade editorially goes farther when it says:

"An Ohio state senator is fathering a bill for a Jiggs-Gump-Mutt school building system. He would bestow sole authority to furnish Ohio schoolhouse plans upon a state architect. The senator would like to have school building construction as standardized as the manufacture of small automobiles. Taxpayers contracting for a school would be required to order one of the stock front elevations prepared by the state architect. The remainder of the building would be the same in every school.

"Imagine that the senator's measure became a law and remained on the statute books for 25 years. Tourists from non-standardized states could play a game more fascinating than crossword puzzles while touring Ohio. Automobile guide books in 1950 would read: 'Straight ahead to school built when Andy Gump was state architect, four miles to right to Mutt and Jeff school architecture, then left to Bringing Up Father pattern.' After acquainting themselves with the stock patterns of schools under each administration tourists could tabulate the popularity of the various architects, such as Jiggs, 45; Nebbs, 23; Gump, 36; and 'Smatter Pop,' 19."

This editor sweeps the subject off the board with a few shafts of sarcasm and humor. Perhaps, that is the most effective way of squelching an improperly conceived proposal. But, the uninformed may look for a more serious presentation of the merits and demerits of the same.

And here it must be said that while standardization has a place in school architecture, its application, however, can be limited to certain features only. The dimensions for classrooms, corridors, stairways and exits may be standardized. A type of wardrobe may be agreed upon. Certain requirements contemplating safety, health, and convenience may be fixed.

But, beyond the regulation of certain integral parts, the average school building as such does not lend itself to the dress pattern method of planning and construction. The location of the site, the environment, the type of school, its specific service to the community, and other considerations determine the architectural form which the school must assume in order to render a maximum service.

In brief, the conditions which enter into the planning of a school structure that shall serve the school needs of a given community or neighborhood, are so manifold that only a thoughtful study by the school authorities together with the skill of an experienced schoolhouse architect will produce the desired results. The regulations providing for safety and stability from the standpoint of housing are now embodied in the building codes of the several states.

There is finally one phase of the subject which cannot be overlooked. In many communities, the people are embued with a strong sense of local pride and patriotism which finds expression in the graceful and ornate in school architecture. If the community wants something fine in the way of schoolhouse, and is willing to pay for it, why not permit it? There is an educational value in architectural beauty of design and stateliness of form which is shared by an entire community. Besides, there is no better index of the progress of a community than that which is expressed in splendid school structures.

AGAIN, ELECTIVE VERSUS APPOINTIVE BOARD OF EDUCATION

A county grand jury at Sacramento, California, recently recommended that in the creation of the city board of education the elective system be employed. Thereupon the Sacramento Union advanced the following argument against the proposed change:

"This would not be a forward step. Present tendencies are in the other direction. Until ten years ago it was to be said truthfully of the public school systems of the United States that they had shown less progress than any other phase of our national life. Educational surveys have been practically unanimous in placing the blame for that condition on the elective system of choosing school directors.

"It is not always possible to keep a public school system out of politics with a non-elective school board, but it is always subject to political considerations when the directors are obliged to campaign for popular election. One does not have to go far afield to find examples of the harm which may befall the public schools under political control."

The editor, in this instance, apparently proceeds from a rather limited knowledge of the subject. To begin with, he is not correct when he states that the public schools had "shown less progress than any other phase of our national life." An unbiased and competent observer will readily concede that the progress made by the public schools of the United States during the past decade has been fully equal to that made in other fields of human endeavor.

The criticism that the schools have not progressed is seldom heard. Moreover, the complaint heard more frequently goes to the effect that the schools are travelling too fast, and that, in scope, they are covering too much ground. They are, on the whole, performing a greater service today than they ever have in their history.

Then the editor makes this startling statement: "Educational surveys have been practically unanimous in placing blame for that condition on the elective system of choosing school directors." This statement, of course, is absolutely untrue. No expert in school surveys ever has, to our knowledge, condemned the elective system as applied to the average American city.

What experts in the field of school administration have condemned is an elective system which provides for ward representation, for large school boards, and for brief tenure. Or, expressed in a different way, they have condemned an elective system which does not provide for representation at large, small bodies, and a reasonably long tenure of service. But, the elective system, as such, and as applied to the average American city is the result brought

about by many years of effort on the part of those concerned in efficient board of education service.

There was a time when under an appointive system, memberships were dealt out as prerequisites by aldermen and city mayors. But, as already stated, the elective system now prevails quite generally and is recognized as being the most acceptable in creating school administrative bodies.

True, in the largest centers of population, where it is too difficult for a voting constituency to ascertain the character and fitness of candidates for school board honors, the appointive is resorted to. But, in the great majority of American cities the elective system prevails.

EXECUTIVE SCHOOL BOARD SESSIONS AND THE PUBLIC PRESS

There is probably no phase of school administrative service which has been exposed to more frequent criticism at the hands of the public press than that which relates to executive or secret school board sessions. When a public body sits behind closed doors, the voice of suspicion is bound to be raised.

The outbursts of criticism on the part of the press is periodical and sometimes vehement and scathing. Thus, during the past month we note an editorial in the Lebanon, Pa., News, in commenting on the situation at Allentown, a neighboring city: "Gumshoe session of public officials are not in favor. The president of the board raised the issue of publicity when she requested the newspaper men not to publish remarks made during the discussion of the proposed awardment of the contract.

"Fortunately for all the people and especially the taxpayers, some of the wiser directors protested and bluntly told the president that public business was being discussed. It is rumored that the pro-secrecy forces will put their secrecy program to another test this month. However, the probability is that the taxpayers will not allow their servants and employees to muzzle the agencies which give them the news."

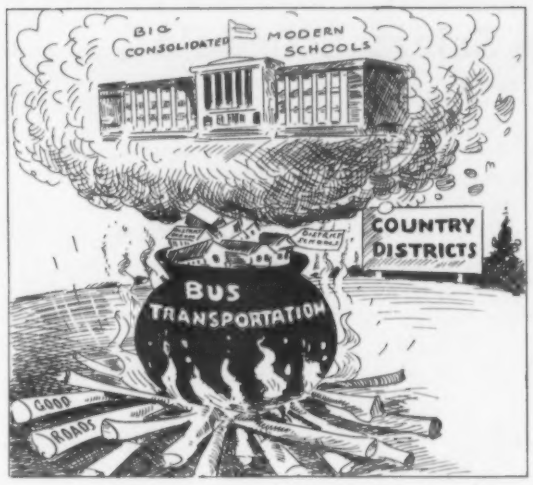
Here is what the Republican, of Cedar Rapids, Iowa, says:

"As have similar boards of education, the newly formed one has started with the customary 'executive secret sessions' from which the newspaper men are excluded. The bugaboo of newspaper reporters, editors and owners, and the general public as well is still with us. Every time such sessions are held the query very naturally arises, just what it is the school board, and other bodies like it, do and are doing that they are either afraid to let the public know about or else, being slightly inclined to dictatorship instead of service to the people, just don't want them to know about. What goes on behind those closed doors? Nothing very serious we hope, and yet, well it naturally makes one wonder."

The editor then gives assurance that in the publication of newspapers, proper discretion is exercised. He says:

"Indeed, in the big cities it is fairly well realized and admitted that newspapers do not print everything that they get their hands on and that they are not trying to do things to hurt the community; for by such tactics they would be only hurting themselves. But more than that it seems to be fairly well admitted and recognized that city councils and boards of education are only servants of the people and that the people are entitled to know what those servants are doing just the same as the manager of a large business is entitled to know what his employees are doing. Why can't it be admitted and recognized here as well?"

The school official who seeks to keep certain information from the press, no doubt has the welfare of the schools in mind. Editors hold that city officials are more free than other public officials in the giving out of news matter. He holds that: "They happen to know also that newspaper editors, from owners on down to copy readers also have some sense about public matters and that they can be trusted not to print things not wanted printed if the least proof can be shown that it would hurt the general public welfare."



THE FIRE AND THE KETTLE.

Whether this be strictly true or not, it only follows that a board of education can better afford to submit to open sessions and rely upon the discretion and fairness of a newspaper reporter, than to be exposed to the charge of secrecy and thus invite the hostility of the press.

It is not argued here that the boards of education referred to are in the wrong. They may have been fully justified in resorting to secret sessions. But, experience in the field of school administration has taught that open sessions are more likely to inspire confidence and that public support that every school system must invite.

There are occasions, as has repeatedly been stated, where executive sessions are fully warranted. When charges of immorality affecting teachers or pupils are under question, all publicity must be avoided. Here the school authorities must proceed quietly, cautiously, and even secretly in adjusting matters quickly and thus avoid scandal.

THE PARTISAN IDEA IN SCHOOL BOARD ELECTIONS

If there has been any progress in the manner of electing members to boards of education, it is in that the party label has been discarded to a great extent. There are, however, still many school boards in the smaller and medium sized cities, more particularly of the eastern sections, whose members are chosen under the banners of the Democratic and Republican parties.

Where the party designation has thus been retained, there are also found some gratifying adjustments. In order to remove the more competitive phases of party prestige, the representation has, in many instances, lent itself to a division upon some equitable basis. In other words, a bi-partisan rather than a strictly partisan plan is observed.

BOOTLEGGING AT ITS WORST.
By John Cassel, New York World.

The thought that the schools must not become the prey to party contention has prompted political leaders to come to some common understanding as to the quota of representation the Democrats and Republicans are to have on the local board of education. Wherever such an understanding has observed a real concern for the welfare of the schools, the results have been satisfactory. While the non-partisan idea in school board elections is generally accepted, there are communities in which it is still believed that the ambition for party supremacy in the field of school administration has its definite value. The thought here is that the school board member who serves the schools well also serves his party, and vice versa.

Thus, even in cities where the non-partisan school board is a fixed fact, somebody may arise and suggest that the city officials who are chosen under a party banner are more responsive to public sentiment. This inference is made in an editorial recently published by the New Bedford, Mass., Times, in passing criticism upon the school board:

"There seems to be an impression among a good many people that the school committee, being elected on a non-partisan basis, is entirely above and beyond any party considerations that may be supposed to bind other elective city government officials. In this they are undoubtedly correct, but this does not carry the assumption that they are not bound by the same obligation to serve the citizens of New Bedford to the best of their ability as are any other chosen servants of the people. The fact should also be borne in mind that, although the school committee is given the veto power in the matter of the selection of school sites, this confidence that has been reposed in them by the citizens does not authorize the members to adopt the tactics of obstructionists. Constructive action is expected from the school board just as it is from the city council. Both are responsible to the voters."

Whether the school board in this instance is right or wrong is of no moment to the point under discussion. No doubt, the school board in dealing with the city council has some good reasons for holding to obstructive measures. But because a nonpartisan school board is at loggerheads with a partisan city council is no reason for believing that the one body is more responsive to public interest than the other. Or, because a school board does not yield to will of a city council is no reason to hold that the former is not conserving the best interests of the schools.

The fact that a mayor or an alderman is chosen under a party designation, and, therefore, is subject to party discipline, renders him no more capable of serving the public interest than the school board member who is chosen upon nonpartisan lines. In fact, the reverse is more likely to be true.

—Out in Iowa a man named Briley hurled a brick through the windshield of a school bus, menacing the safety of twenty-two pupils. The driver became panic stricken, and ran the bus into a ditch where it was capsized. No one was hurt except Briley, who suffered a broken leg, a good beating at the hands of the driver, and arrest on a warrant sworn out by the school board.

—"Air clouded with verbal brickbats," reads the headline of a report on a school board session at Bristol, Conn. And then the newspaper says: "District Chairman Howard Andrews went head first into an oratorical typhoon, which swept and roared for the next three hours."

Morgantown Single Salary Schedule

The school board of Morgantown, W. Va., has adopted a single salary schedule for teachers, which takes into account the professional preparation of the instructors and their ratings based upon five established points.

Under the schedule, all teachers are divided into five groups:

	Minimum	Maximum	Increases
CLASS 1. Minimum training, West Virginia Standard Normal School graduate — high school plus two years.....	$ 990	$1,350	4x45 2x90
CLASS 2. Minimum training plus one year—high school plus three years, must include professional training equivalent to a normal graduate	$1,035	$1,440	3x45 3x90
CLASS 3. Minimum training plus two years—high school plus four years of professional and academic training, 120 semester hours, not organized so as to obtain a degree, must include 20 hours of professional training.....	$1,080	$1,530	2x45 4x90
CLASS 4. Bachelor's degree from standard college or university. Must include 20 semester hours professional training together with practice teaching.....	$1,350	$1,980	2x45 6x90
CLASS 5. Master's degree. Must include a major in the work taught besides 20 semester hours professional training, all of the latter of which may be undergraduate work.	$1,350	$2,160	2x45 8x90

Heads of departments in the high school, directors of special departments, teachers and supervisors of special subjects in the elementary and high schools for which special training is required may, upon the recommendation of the superintendent, have their salaries fixed on the basic schedule of $90 to $320 per year above that provided in the regular schedule, the amount and number of each increment to be the same as that in the regular schedule.

All teachers will be graded by the principal, supervisors, and the superintendent at least once each year. Where the average grade for a teacher falls between two and three for any year, she will be considered on probation for the following year and may not receive the increase provided for under the schedule. Teachers receiving a grade of one, or between one and two, will be dropped from the list.

The interpretation of grades is as follows: Five is rare; four is very good; three is good; two is low but allows another chance, and one indicates that the teacher's work is unsatisfactory and that she will not be reappointed.

Teachers are graded on the basis of the following five points:

1. Daily preparation and classroom management.

2. Cooperation with school authorities, fellow teachers and the homes.

3. Results of work as determined by standard objective tests.

4. Quality of instruction as determined by teaching standards.

5. Quality of work done in the special subjects and activities.

The schedule outlines a number of special provisions governing the payment of salary increments. Each teacher must spend at least six weeks every third summer in study or travel, and her success grade must not be below three, if she is to receive the increment provided. No teacher must take more than three semester hours of work in college or other instructional courses during the semester. Inexperienced teachers, or those employed in the schools less than two years, will be required to pursue studies upon which they will be examined twice each year.

Teachers in grades one to six inclusive, shall without reference to training, be placed in Class 1 until they have served in the schools for at least three years.

No teacher shall receive any increment who has not presented a certificate showing summer school attendance during the summer of 1922, 1923, or 1924.

One-week sick leave is granted teachers in each year of nine months, or a proportionate leave for less than nine months, without any loss in salary, provided the illness is personal. Absence from duty for any other reason will entail a reduction in salary for the time absent.

Principals of four and five-room buildings will receive a minimum salary of $1,350 and a maximum of $1,600; those in six, seven or eight-room buildings will receive a minimum of $1,500 and a maximum of $2,100; those in larger elementary schools will receive a minimum of $1,800 and a maximum of $2,800; those in junior high schools will receive a minimum of $2,000 and a maximum of $3,000; those in the high school will receive a minimum of $3,800 and a maximum of $4,000.

A. C. Monahan,
Formerly, U. S. Bureau of Education

A National Directory of Commodity Specifications will appear later this summer from the press of the Government Printing Office, prepared under the direction of the United States Bureau of Standards. An examination of the page-proof just made shows that it will be of very great value for every purchasing agent, particularly for those of city school systems and of colleges and universities.

It contains about 600 printed pages and is of the standard catalogue size. It is to be followed by an encyclopedia of specifications giving in loose pamphlet form complete copies of the more important specifications, printed uniformly with the directory and adapted to fit a standard size of loose leaf binder.

This directory was prepared under the immediate direction of Dr. A. S. McAllister, engineer-physicist of the Bureau of Standards, assisted by an advisory board composed of representatives of a number of national organizations. Among these organizations are the American Engineering Standards Committee; American Hospital Association; American Association for Government Service; United States Chamber of Commerce; National Association of Purchasing Agents; and the National Conference of Business Paper Editors.

The proposals for its preparation were first made in 1923 at a meeting of State Purchasing Agents. Secretary Hoover, who was present, was impressed with the need of the directory and offered the services of his department in its preparation.

In the directory, 6,000 commodities are included. They are divided into ten groups, covering respectively animals and animal products; vegetable food products, oil, seeds, and beverages; other vegetable products except fiber and wood; textiles; wood and paper; nonmetallic minerals; ores; metals and manufactures; machinery and vehicles; chemicals and allied products; and miscellaneous.

The sections which are of particular value to school board members engaged in building operations are those of wood and paper which include all sorts of lumber and building papers; and the section on non-metallic minerals in which is included cements, building stones, lime, slate, etc.

The idea behind the entire publication is the development of more uniform specifications and as small a number as feasible. At the present time, the purchaser finds great difficulty in purchasing because of the differences in deliveries of supposedly identical materials. Most of the specifications now in use in this country have been developed by consumer organizations. For reasons which seem to them satisfactory, most producer organizations advocate the sale of commodities on the trade-brand or company-reputation basis. However, certain of the larger and more powerful organizations of producers have developed specifications in connection with sales promotion.

Behind this work is the idea that only those standards that are entirely satisfactory to both the producer and consumer can ever come into wide use. The directory contains as far as possible those that have been found satisfactory to both. It includes as many specifications as possible which contain not only the information needed by the manufacturer and by the purchasing agent, but also that needed by the engineer in testing, the inspector, the chemist, and the people who are to receive and use the material.

In the preparation of this directory, copies were obtained of all specifications known to be suitable for use. They were obtained from all existing agencies vitally interested in the preparation and use of the specification from the point of view of both the producer and the consumer. In addition, specifications were obtained from all government departments and independent estimates and correspondence was carried on with more than 500 public purchasing agencies and 500 trade associations and technical associations having national recognition.

The specifications obtained were classified and sent in typewritten form to the organizations best qualified to criticize them constructively. The suggestions received were incorporated in the final copy before the matter was sent to the printer.

THE FEDERAL SPECIFICATIONS BOARD

It is probably not generally known that the United States government, through the Bureau of the Budget, in 1921 organized a Federal Specifications Board for the purpose of coordinating the materials and services used by the government. The specific duty of the Board is to compile and promulgate standard specifications for materials to be purchased by the various departments. Up to the present time, the Board has promulgated over 300 sets of specifications, all of which are printed and may be

(Concluded on Page 70)

Now is the time to have your desks Valsparred—when schools are closed and children are away for the summer.

Valspar in the Class Room

School children will be school children. And what havoc they play with their desks! Scratches, spots, wear—these are the common lot of the class room desk. Small wonder that desk upkeep has always been a costly problem of School Boards.

This problem is being solved with Valspar!

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The Varnish That Won't Turn White

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Ornamental
DENZARS

There is a growing tendency among schools to use an ornamental type of DENZAR in the school auditorium, in the entrance lobbies and elsewhere in the school building.

To meet this demand we have designed a number of attractive decorative types of this "ideal light for schools" and have just brought out a new catalog in which these are illustrated and described, as well as the plain types of DENZAR which are so widely used for classroom lighting.

The new DENZAR catalog also contains a section on Exterior Lighting, illustrating bronze standards and brackets for lighting the entrances to school buildings.

We shall be glad to mail you a copy of this new DENZAR catalog on request. You will find it an exceedingly helpful publication if you are interested in improving the lighting of your schools.

BEARDSLEE CHANDELIER MFG. CO.
219 South Jefferson St., Chicago

(Concluded from Page 68)

obtained by any one interested, usually for five cents a copy, from the Government Printing Office. A complete list may be obtained from the Bureau of Standards, or from the Printing Office.

The specifications included in these 300 include specifications for such materials of interest to school boards as practically all sorts of building materials, cement, oils, paints, lumber, asphalt, linoleums, built-up roofing, inks, soaps, electrical equipment, brushes, brooms, rubber goods of many types, and practically all metals used in building operations.

VETERANS' OPPOSITION TO ADMINISTRATION PLAN FOR A DEPARTMENT OF EDUCATION AND RELIEF

An interesting development is taking place in further opposition to the plan for a Federal "Department of Education and Relief," as proposed by the Congressional Committee on Reorganization of Executive Departments and approved by the Republican Party in its convention platform and by the administration.

Educational forces have already united in their opposition to the combination in a single department with the various government educational activities and bureaus, the Veterans' Bureau and the Pension Office. Together they have prepared a bill which is now, through the American Council on Education, being sent to all sorts of educational authorities and organizations for suggestions and opinions, the bill being almost identical with the administration proposal, but omitting from the department which would be created the "relief" features.

Now the veterans of the world war, through their various organizations, have taken steps to prevent the "absorption of the Veterans' Bureau" in the proposed department. At a meeting just held in Washington by representatives of various veterans' organizations, it was unanimously agreed that all the organizations would be asked to oppose the movement. This would include action by the American Legion at its meeting in Omaha in the fall; by the Veterans of the Foreign Wars at its meeting in Tulsa, Oklahoma, in August; by the Disabled American Veterans at its meeting in Omaha early in the summer; and by various other minor organizations. The plea of the veterans is that the combination proposed would "submerge" the veterans' relief. They point out the unsatisfactory state of affairs prior to the organization of the Veterans' Bureau when the veterans' relief was a part of the work of the War Risk Insurance Bureau of the Department of the Treasury. They point out, also, that the Veterans' Bureau at the present time is responsible for one of the largest single items of expense of the Federal Budget, having already disbursed approximately $705,000,000 for compensation; $645,000,000 for insurance; and $609,000,000 for vocational training. In addition, the Veterans' Bureau is operating fifty hospitals of its own with over 29,000 men as patients. Of this, 25,000 are either tubercular or mental cases, with the remainder about equally divided between general medical cases and surgical cases.

It seems, therefore, that neither of the two groups most concerned in the proposed new department desire to be grouped together, and each is using all possible influence to retain separate organizations.

RECOGNIZING INDIVIDUAL DIFFERENCES AS PRACTICED IN THE LINCOLN HIGH SCHOOL, PORTLAND, ORE.

(Concluded from Page 56)

to have one English class do three terms' work in two terms. It seemed all right the first term, but near the end of the term some dropped out, others were sick, and one or two could not stand the pace. The result was that we had only about two-thirds of those who had started. No others could be put in the class because no others in that subject had done the work that this class had done. We believe that it is far better to enrich the course than to try to shorten it. We believe that it should be the aim of the high school to give as broad and at the same time as thorough an education as possible, rather than a diploma in the shortest possible time.

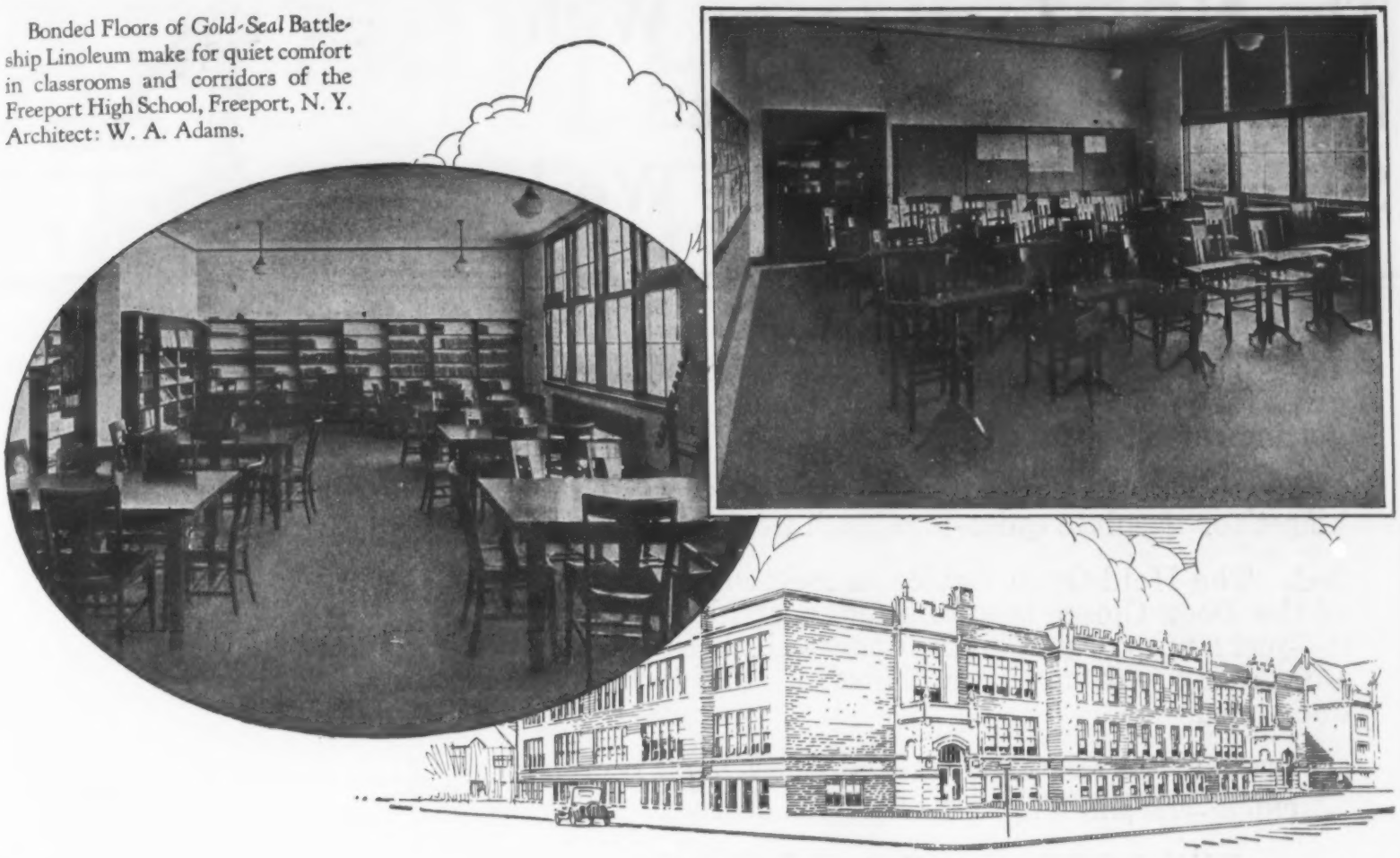
As was stated above, it is difficult to make a segregation if there are only three or four classes in a subject. As a result it cannot be worked well in small high schools. In large high schools with a large number of classes in each subject it is possible to make a very complete segregation. It may be some justification for the large school.

We started this plan with a few classes two years ago; now the whole school is segregated as outlined above. We know that the plan is subject to criticism because it is based upon the teacher's judgment of the student rather than on an absolute standard. Our experience thus far does not lead us to think that this defect is as serious as appears at first. We believe that it has an advantage over segregation based on intelligence tests in that it recognizes special aptitudes in any subjects. We do not claim that it is a panacea for all the ills of high schools, but we believe that it is a step in the right direction. The plan has met with the approval of the parents. Our students have done better work as a result of it and the teachers say they can do better teaching. We hope to find some way to test the "E" classes, especially, as time goes on, to see if they are increasing in ability.

—Mr. J. B. Stout of Shabbona, Ill., has been elected superintendent of schools at Amboy, to succeed Thomas Brew.

—Mr. Charles S. Kniss has been elected superintendent of schools at Juniata, Pa. He succeeds Mr. M. B. Wineland.

Bonded Floors of *Gold-Seal* Battleship Linoleum make for quiet comfort in classrooms and corridors of the Freeport High School, Freeport, N. Y. Architect: W. A. Adams.



Battleship permanence in your school floors—

If there is one place where floors receive harder usage than in the corridors and classrooms of a school building, it is on board a battleship of the U. S. Navy.

Therefore, when it's a question of laying a *permanent*, yet comfortable and economical, school floor, we recommend a resilient flooring built to withstand even battleship service—*Gold-Seal* Battleship Linoleum.

Gold-Seal Battleship Linoleum conforms in every respect to the rigid requirements of Federal Specification No. 209 for battleship linoleum. When this super-durable flooring is installed the Bonded Floors way—i.e. by skilled workmen using scientific modern methods, under the supervision of our experienced flooring engineers—we are prepared to back its durability by a Surety Bond. This Surety Bond, issued by the U. S. Fidelity and Guaranty Co., insures against repair expense.

But your *Gold-Seal* Battleship Linoleum floor will have other merits than freedom from the trouble and expense of repairs and refinishing. It is resilient and restful to walk on; sanitary; easy to clean; noiseless—no disturbing clatter of footsteps will take students' minds off their work.

Whether it is a question of new floors or an installation over old or noisy concrete or wood floors, educators are invited to consult our highly-trained engineers. Write our nearest office.

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Resilient Floors for Every Need

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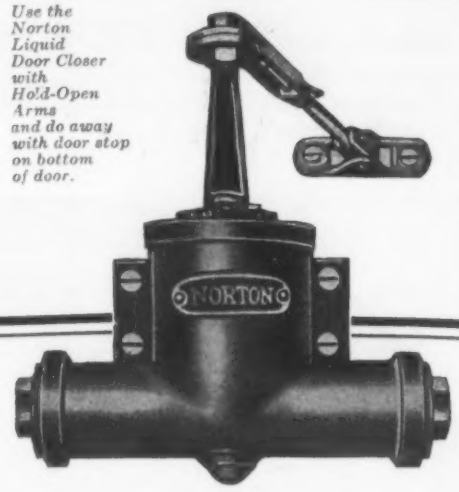
Every Schoolroom Should Have One



Use the Norton Liquid Door Closer with Hold-Open Arms and do away with door stop on bottom of door.

1st. The doors are closed with a uniform speed, which gives the pupils a chance to go through a door without getting caught or injured.

2nd. Having two speeds, the speed at the latch can be set for absolute quiet—no latch necessary.

3rd. The Hold-Open Device connected with the arm of the Door Closer is automatic, a child can operate it—just a push or pull on the door is all there is to do it. Does away with door stop, hook or strap to hold the door open.

SERVICE:—We have expert servicemen on call, free of charge.

PRICE:—The price is right. Send for a representative.

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A Partial List of Schools NORTON Equipped

Skinner Junior High School, Denver, Colo.

North East High School, Minneapolis, Minn.

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Technical High School, Omaha, Nebr.

SALARY STATISTICS FOR HIGH SCHOOL LIBRARIES, 1924-1925

The American Library Association Committee on Salaries has presented a complete table of salary statistics for high school libraries, compiled by Lucile F. Fargo, a member of the committee. It is the first compilation of high school library salaries to be published.

In the great majority of cases it is noted school library salaries are paid by the school administration. In many cities where this is the case, the salary schedule is the same as for teachers, provided school librarians have the same educational qualifications. In at least one city, library school graduates are not eligible to receive teachers' salaries until they have presented a certain number of credits for work in education. In another city, senior high school librarians must be certified and junior high school librarians need not, the result being that persons long on teaching qualifications and short on library training receive better salaries than others specially qualified in library science.

Of the 42 cities listed in the table, eight have ten or more librarians, six have four, and six have one librarian. Of the cities mentioned, Cleveland, Jersey City, Kansas City and New Bedford report that the salaries of librarians are paid by the public library. In the remaining 38 cities, the salaries are paid by the school boards. The highest total for salaries, $58,648, is paid in Denver, Colo., with the next highest, $27,719, paid by Philadelphia. The smallest totals were paid in Berkeley, Gary, Rockford, St. Joseph and Somerville.

Salary Statistics Junior and Senior High School Libraries 1924-25

City	Number of Librarians	Librarian Minimum	Librarian Maximum	Total Salaries	Salaries Paid by P. L. (Public Library) S. B. (School Board)
Atlanta, Georgia	4	$1,020	$1,200	....	S. B.
Baltimore, Maryland	4	1,000	1,340	4,800	S. B.
Berkeley, California	1	1,800	....	1,850	S. B.
Birmingham, Alabama	3	1,300	1,425	4,150	S. B.
Bridgeport, Connecticut	1	2,190	....	2,190	S. B.
Buffalo, New York[1]	8	1,600	2,400	....	S. B.[1]
Chicago, Illinois	7	1,680	1,980	44,940	S. B.
Cincinnati, Ohio	7	1,400	2,800	13,150	S. B.
Cleveland, Ohio	19	1,700	2 500	58,648[2]	P. L.[3]
Denver, Colorado	11	1,350	2,200	18,790	S. B.
Detroit, Michigan	21	1,600	2,700	....	S. B.
Duluth, Minnesota	2	1,100	2,125	3,223	S. B.
Erie, Pennsylvania	3	850	1,250	3,300	S. B.
Flint, Michigan	1	2,160	....	3,420	S. B.
Fort Worth, Texas	4	900	1,125	4,050	S. B.
Gary, Indiana	1	1,500	....	1,500	S. B.
Kansas City, Missouri	{2	1,850	2,200	4,650	S. B.
	{3	1,500	2,100	18,480	P. L.
Houston, Texas	2	1,800	2,000	5,500	S. B.
Jersey City, New Jersey	2	1,680	1,920	7,006	P. L.
Louisville, Kentucky	6	750	1,400	6,030	S. B.
Milwaukee, Wisconsin	7	1,060	1,540	6,783	S. B.
Minneapolis, Minnesota	10	1,500	2,500	17,950	S. B.
New Bedford, Massachusetts	1	2,300	....	2,300	S. B. & P. L.
New Haven, Connecticut	2	1,250	1,500	2,650	S. B.
New York, New York[2]	65	1,500	2,700	....	S. B.
Newark, New Jersey	4	2,800	3,360[4]	11,760	S. B.
Oakland, California	10	1,740	2,580[5]	23,825	S. B.
Philadelphia, Pennsylvania	9	2,150	3,200	23,200	S. B.
Pittsburgh, Pennsylvania	12	1,975	3,200	27,719	S. B.
Rochester, New York	10	1,700	2,600	21,575	S. B.
Rockford, Illinois	2	1,000	1,650	1,950	S. B.
St. Joseph, Missouri	1	1,500	....	1,500	S. B.
Salt Lake City, Utah	4	1,390	1,750	6,100	S. B.
San Diego, California	4	1,752	2,500	10,432	S. B.
Seattle, Washington	8	1,860	2,400	17,100	S. B.
Sioux City, Iowa	1	1,740	....	2,880	S. B.
Somerville, Massachusetts	1	1,500	....	1,500	S. B.
Spokane, Washington	2	2,250	2,250	8,600	S. B.
Tacoma, Washington	2	2,040	2,220	4,260	S. B.
Washington, District of Columbia	8	1,600	1,800	14,700	S. B.
Yonkers, New York	2	1,825	3,000	4,825	S. B.
Youngstown, Ohio	2	1,700	2,000	4,000	S. B.

[1]Salary figures for librarians employed by school board; one school is branch of public library, salary figures not given.
[2]Includes salaries of pages.
[3]The salary of one librarian in teacher training high school shared by board of education.
[4]For twelve months' service.
[5]Salary of supervising librarian who also directs Teachers' Professional Library.

DR. HERVEY TELLS HOW TEACHERS ARE SELECTED

Likening the board of examiners of the New York City schools to a purchasing agent who passes upon the quality of those who enter the public school system of the city as teachers, Examiner Walter L. Hervey, in a radio talk, declared it was the duty of the board of examiners to see that only those who can render adequate return to the city are licensed as teachers, directors and principals.

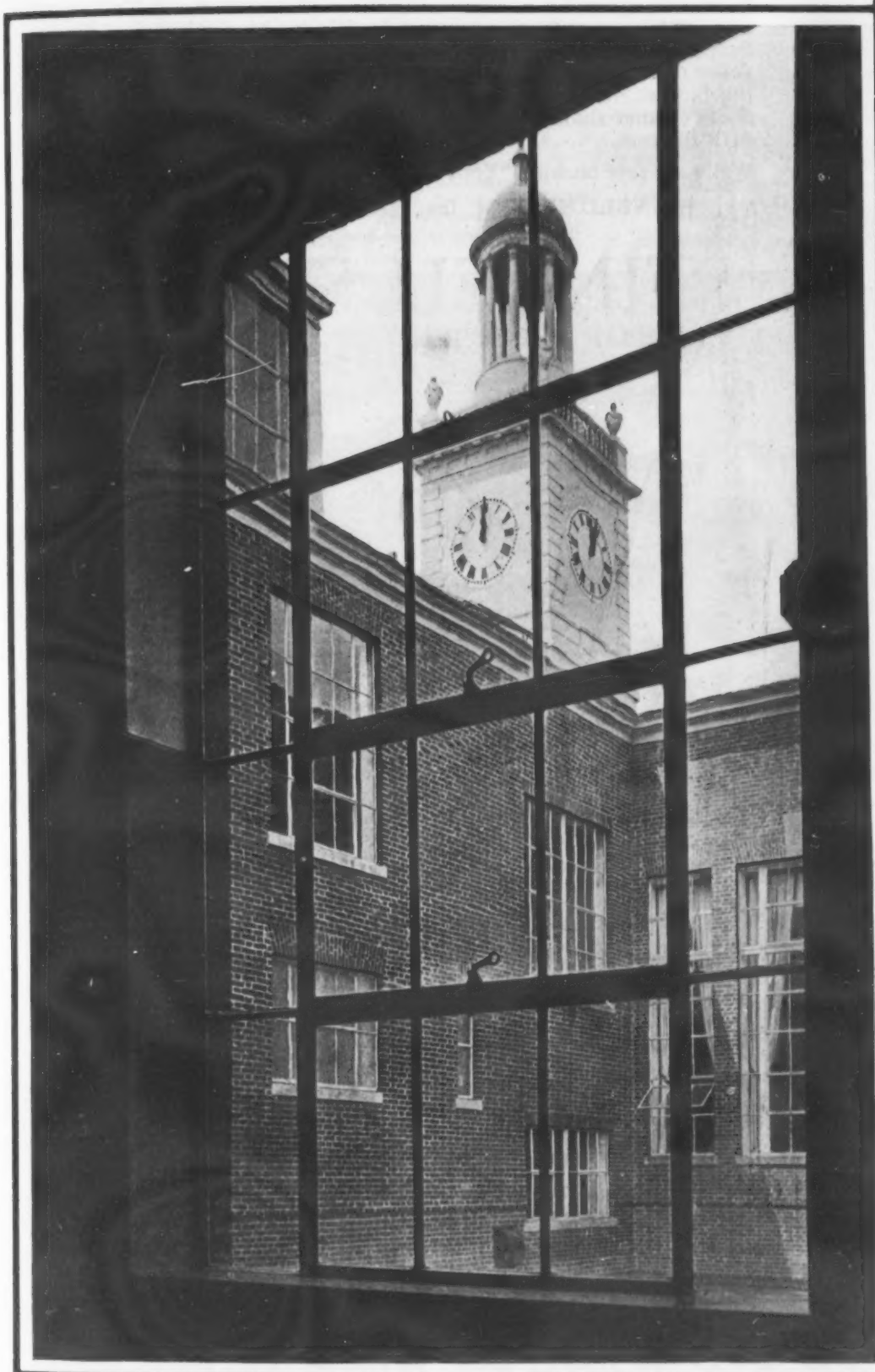
Dr. Hervey pointed out that even from the standpoint of money, the quality of the teaching force is important; for the teachers are the salesmen, so to speak, in this vast organization. The high school appropriation for their salaries and for supplies was for the current year the enormous sum of $15,499,072. If the teachers are one hundred per cent efficient, the city gets its money's worth. If they are only ninety per cent efficient, the city stands to lose $1,500,000, not counting the loss involved through an insufficient return on the millions spent on buildings and maintenance.

To keep the ranks filled there must be licensed each year several hundred new teachers. To be exact, the average number required for the past two years in only seventeen subjects was 267.

Dr. Hervey explained how the selection of high school teachers is done. He compared it to

(Concluded on Page 74)

ARCHITECTURAL FENESTRA



South Side High School, Rockville Center, Long Island.
Architect, Huse T. Blanchard

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St. John's Mil. Academy, Nashotah, Wis.
Board of Education, Lincoln, Nebr.
Board of Education, Richmond, Va.
Board of Education, Middletown, Ohio.
Board of Education, Elizabeth, N. J.
Board of Education, Fort Worth, Texas.
Cornell University, Ithaca, N. Y.
Board of Education, Buffalo, N. Y.
Board of Education, Pawtucket, R. I.
Board of Education, Danville, Ill.
Board of Education, Oakland, Calif.
Mt. Clemens Board of Education, Mt. Clemens, Mich.
University of Kentucky, Lexington, Ky.
Michigan Agricultural College, E. Lansing, Mich.
State Normal School, Potsdam, N. Y.
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"The cost of a scrubbing machine is so little and the cost of operation so nominal, that practically every elementary school can afford to have one."

From *"An Analysis of Janitor Service in Elementary Schools"* by Chas. Everand Reeves, Ph. D.

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Forest Park High School Baltimore, Md.

(Concluded from Page 72)

a series of siftings where the coarser gravel is first eliminated, then the pebbles thrown out, then the dust blown away, until what is left is the standard clear, sharp sand required by the specification.

KANSAS RURAL COMMUNITIES RETAIN ONE-ROOM SCHOOLHOUSE

Kansas rural communities still cling to the little one-room schoolhouse and its single teacher. A survey of the state recently completed by Prof. Edgar Mendenhall, head of the rural education department at the Kansas Teachers' College of Pittsburg, shows that the majority of the districts served by one-room schools are either lukewarm, or hostile, to the consolidated school.

The survey reveals that 46 of the 105 counties are on the whole unfavorable to consolidation. Forty-six others were reported to be divided in opinion or indifferent. Only eleven were found to be favorable to consolidation. On two no report was obtained.

There are, however, consolidated schools in 55 counties, and reports from the communities directly served by the schools were distinctly encouraging. In forty of these counties the patrons of the combined schools like them. In only thirteen counties were they reported as divided in sentiment. Only one county reported that the consolidated schools were unpopular with their patrons. One failed to report.

Counties having three or more consolidated schools are as follows: Thomas, 8; Reno, 7; Butler, 7; Pratt, 6; Franklin, 3; Lyon, 3; Wilson, 4; Chautauqua, 3; Greenwood, 5; Chase, 4; Dickinson, 3; Marion, 5; Jewell, 3; Barber, 3; Rooks, 3; Pawnee, 4; Edwards, 4; Clark, 3; Ford, 3; Lane, 3; Gray, 3; Logan, 4.

Consolidated schools in Kansas total 138, with an enrollment last year of 17,688.

The one-teacher schools total 7,429. During the school year just ended, 1,634 of these schools enrolled as few as ten pupils.

The most frequent argument against consolidated school, Professor Mendenhall found, was the increased cost. Difficulties of transportation was the next most frequent objection.

In order to aid one community in a project of consolidation with neighboring rural districts, Professor Mendenhall recently conducted a bus tour to three consolidated schools, with twelve men as his guests. They found the patrons of these schools liked the new system, that land values had increased, and that farms in the consolidated districts rented more easily than those outside. With a few exceptions, the visiting party was converted to the idea.

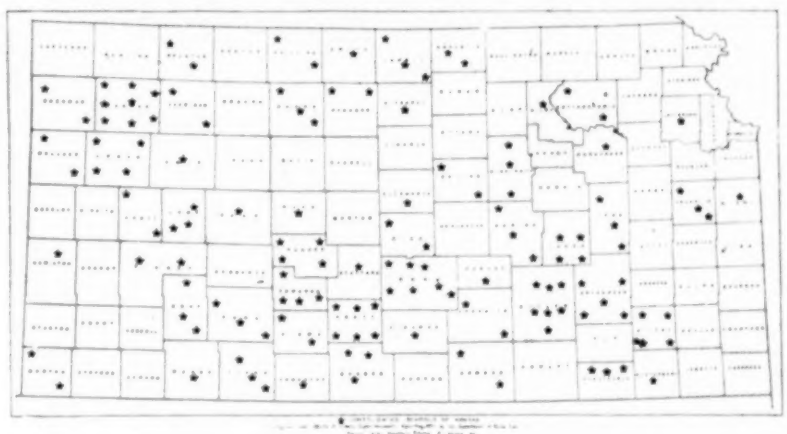


CHART OF CONSOLIDATED SCHOOLS OF KANSAS.

JUST FUN
A Former Teacher

We often hear of the saving grace of a sense of humor, but when I taught school I found my sense of humor too big or too badly misplaced for a school teacher. Not even by ramming my handkerchief in my mouth could I refrain from laughing at times when the proper dignity of a teacher forbade it.

One day in a grammar class I asked, "Henry, name and define the three genders". Henry, who seldom looked at his lesson, received a hunch of "masculine, feminine, and neuter". He rose to his feet and began, "Masculine is one. It denotes things that don't have any feeling." The class laughed and so did I. It was a hard knock on Henry's sex. I sometimes think it's true.

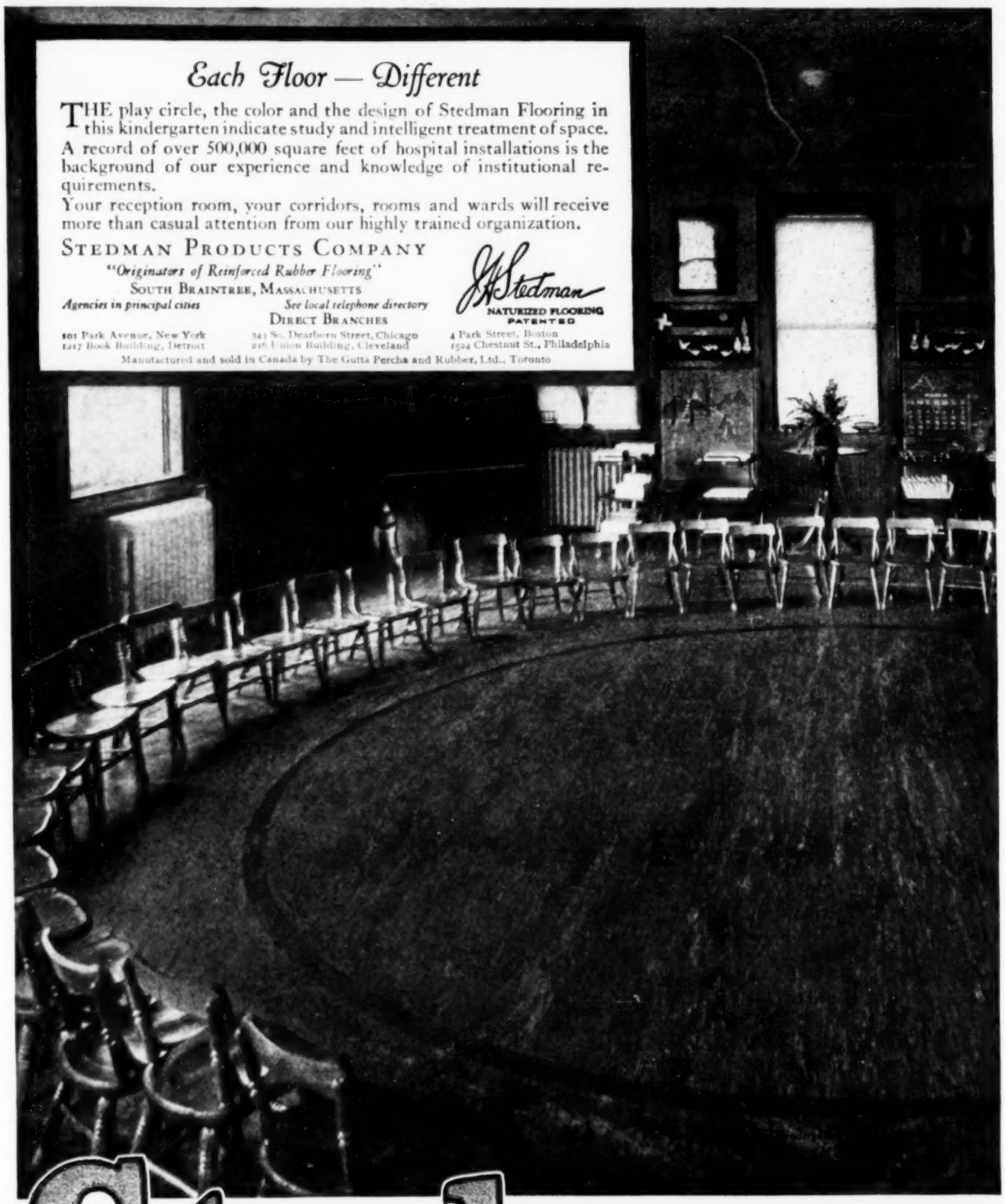
One day a girl in the same class with Henry was called upon to give the principal parts of the verb "freeze". The principal parts "write, wrote, written" had just been given. The girl speedily arose and replied "freeze, froze, frizzen".

In a hygiene test at another time, the various classes of poison, their effects, and antidotes were called for. One girl mentioned irritants and said, "They produce information". I wrote above, in red ink, "If so, you need a little." Fortunately she caught the joke.

Sometimes a boy delights in making the class laugh. One time I had such a boy in class; I could not refrain from laughing myself sometimes. I asked, "Define synonym." He answered, "It's a word you use when you don't know how to spell the word you want to use."

But the funniest things that every happened were the little wordless incidents, such as one day happened while a class was taking breathing exercises. A tall, awkward, bully of a boy fell sprawling, and was indignant that the whole room, including the teacher, laughed.

The first school I ever taught was in a rural community. I was very young and enthusiastic, and wore common sense shoes altogether, and tried to teach my young hopefuls the sense of wearing similar ones as they grew up. The larger girls insisted that such shoes made a person's feet look too big. I answered, "Well, who cares?" One afternoon in a little literary society, a third grade boy put in a joke to this effect: "Our teacher is noted for having big feet.'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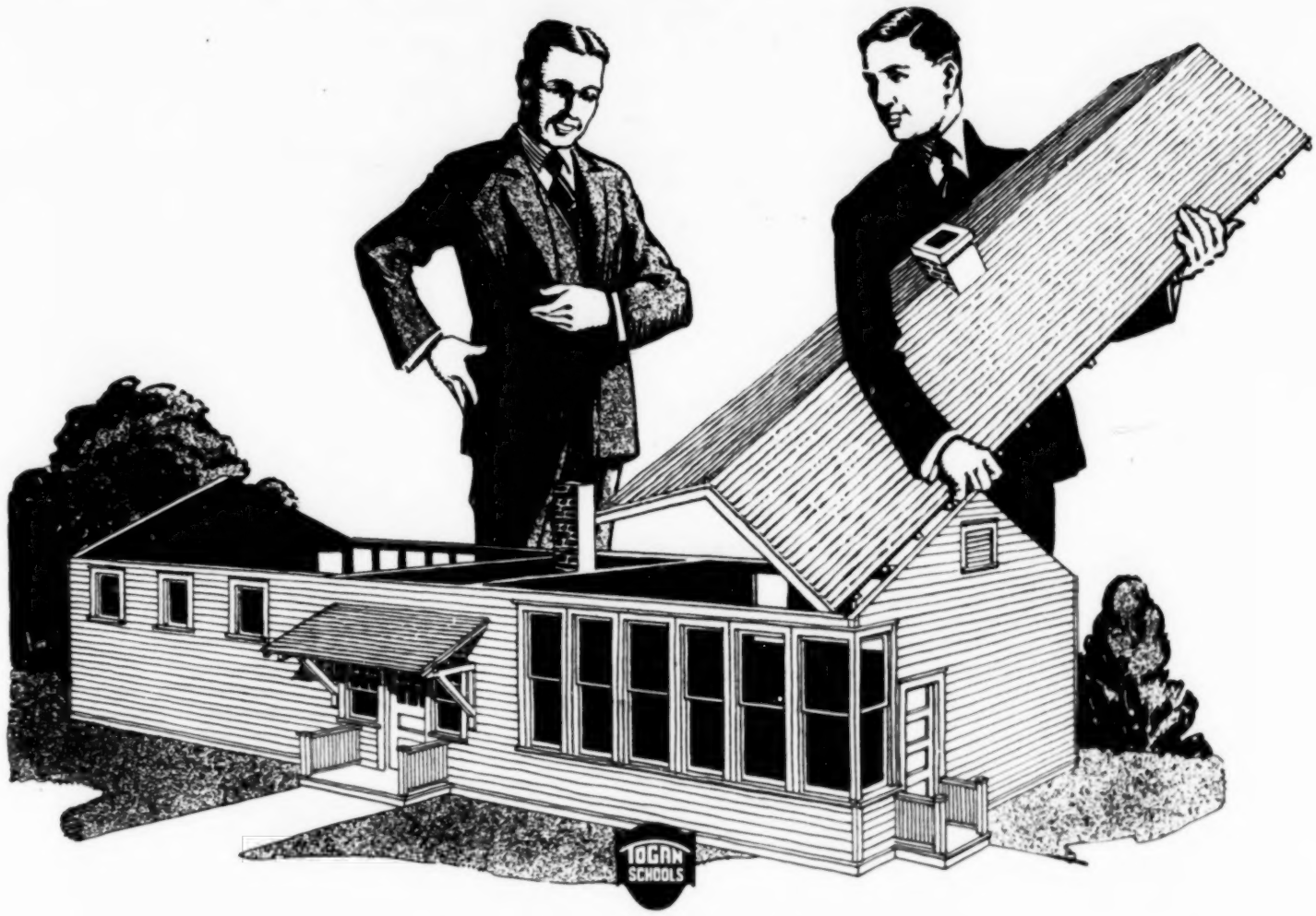

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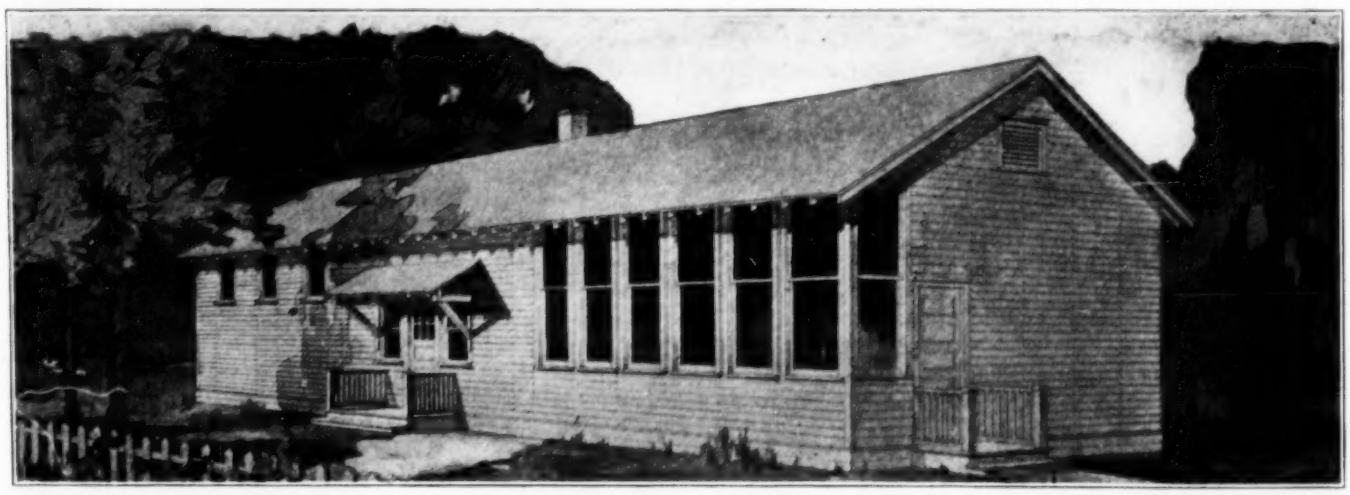

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OREGON SCHOOL ACT INVALID

The United States Supreme Court, on June first, declared invalid the Oregon compulsory school attendance law, and denied the several claims of the state's appeal from the findings of the lower court. The decision in brief holds the law to be an interference with the liberties of parents to direct the education of their children, and destructive of the property of corporations and individuals who own private schools. The suit was brought by the Hill Military Academy, a private school, and the Sisters of the Holy Names, a Catholic Sisterhood, and was argued before the court on March 15 and 16. The court in its decision, said in part:

"No question is raised concerning the power of the state reasonably to regulate all schools, to inspect, supervise and examine them, their teachers and pupils; to require that all children of proper age attend some school, that teachers shall be of good moral character and patriotic disposition, that certain studies plainly essential to good citizenship must be taught, and that nothing be taught which is manifestly inimical to the public welfare.

"The inevitable practical result of enforcing the Act under consideration would be destruction of appellees' primary schools, and perhaps all other private primary schools for normal children within the state of Oregon. Appellees are engaged in a kind of undertaking not inherently harmful, but long regarded as useful and meritorious. Certainly there is nothing in the present records to indicate that they have failed to discharge their obligations to patrons, students or the state. And there are no peculiar circumstances or present emergencies which demand extraordinary measures relative to primary education.

"Under the doctrine of Meyer v. Nebraska, 262 U. S. 390, we think it entirely plain that the Act of 1922 unreasonably interferes with the liberty of parents and guardians to direct the upbringing and education of children under their control. As often heretofore pointed out, rights guaranteed by the Constitution may not be abridged by legislation which has no reasonable relation to some purpose within the competency of the state. The fundamental theory of liberty upon which all governments in this Union repose excludes any general power of the state to standardize its children by forcing them to accept instruction from public teachers only. The child is not the mere creature of the state; those who nurture him and direct his destiny have the right, coupled with the high duty, to recognize and prepare him for additional obligations.

"Appellees are corporations and therefore, it is said, they cannot claim for themselves the liberty which the Fourteenth Amendment guarantees. Accepted in the proper sense, this is true. Northwestern Life Ins. Co. v. Riggs, 203 U. S. 243, 255; Western Turf Association v. Greenburg, 204 U. S. 359, 363. But they have business and property for which they claim protection. These are threatened with destruction through the unwarranted compulsion which appellants are exercising over present and prospective patrons of their schools. And this court has gone very far to protect against loss threatened by such action. Truax v. Raich, 239, U. S. 33; Truax v. Corrigan, 257 U. S. 312; Terrace v. Thompson, 263 U. S. 197.

"The courts of the state have not construed the Act, and we must determine its meaning for ourselves. Evidently it was expected to have general application and cannot be construed as though merely intended to amend the charters of certain private corporations, as in Berea College v. Kentucky, 211 U. S. 45. No argument in favor of such view has been advanced.

"Generally it is entirely true, as urged by counsel, that no person in any business has such an interest in possible customers as to enable him to restrain exercise of proper power of the state upon the ground that he will be deprived of patronage. But the injunctions here sought are not against the exercise of any proper power. Appellees asked protection against arbitrary, unreasonable and unlawful interference with their patrons and the consequent destruction of their business and property. Their interest is clear and immediate, within the rule approved in Truax v. Reich, Truax v. Corrigan and Terrace v. Thompson, supra, and many other cases where injunctions have issued to protect business enterprises against interference with the freedom of patrons or customers. Hitchman Coal & Coke Co. v. Mitchell, 245 U. S. 229; Duplex Printing Press Co. v. Deering, 254 U. S. 443; American Steel Foundries v. Tri-City Central Trades Council, 257 U. S. 184; Nebraska District, et cetera, v. McKelvie, 262 U. S. 404; Truax v. Corrigan, Supra, and cases there cited.

"The suits were not premature. The injury to appellees was present and very real, not a mere possibility in the remote future. If no relief had been possible prior to the effective date of the Act, the injury would have become irreparable. Prevention of impending injury by unlawful action is a well recognized function of courts of equity.

"The decrees below are affirmed."

This brings to a close a notable case which has been before the public for practically three years, dating from the time when the organized effort for the passage of the so-called Oregon compulsory public school attendance law was started. The various steps in this case are as follows:

On November 7th, 1922, by a referendum vote of 115,506 to 103,685 a law was passed by the people of Oregon which provided that all children 8 years of age or over up to the age of 16 should be required to attend the public schools and public schools only, for the period of time the public schools were in session. The school attended must be the school in the district in which the child lived. The only exceptions to attendance were for children physically unable to attend school, children who had completed the eighth grade, children living a prohibitive distance from school, the distances being fixed by the law, and children being taught by the parent or private tutor the subjects being taught in the first eight years of the public school when specific permission had been granted for such teaching by the county superintendent of schools. In effect, therefore, this law prohibited parents from sending children to any private schools either in the state or out of the state, and prohibited them from sending their children to public schools other than the one maintained in their own district, and prohibited them from employing a tutor for their children in lieu of public school education except with the written permission of the county superintendent of schools.

The act was to take effect on the first day of September, 1926.

The Hill Military Academy, a strictly private institution, asked the courts for an injunction against the officials of the state, enjoining them from putting the law into operation. Together

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with the Hill Military Academy, like action was brought by the Society of the Sisters of the Holy Names of Jesus and Mary, a corporation conducting sixteen schools and academies with an attendance of approximately four thousand children and one orphange in which is a grade school for 100 orphan children. A number of other private schools in the state conducted by individuals and organizations assisted in getting these cases before the courts and in employing counsel to present the pleas of the private schools.

The United States District Court of Portland, presided over by three judges, in a unanimous decision rendered March 31st, 1924, issued an order restraining the state from enforcing the law. This reads: "Ordered and adjudged that an interlocutory injunction be and the same is hereby granted as prayed for in the amended bill of complaint, and the clerk of this court is hereby ordered to issue the same, restraining the defendants Walter M. Pierce, as governor of the state of Oregon; Isaac H. Van Winkle, as attorney general of the state of Oregon, and Stanley Myers, as district attorney for (fol. 36) Multnomah County, state of Oregon, and each of them, and all persons claiming to act under their authority or direction or control from enforcing or attempting to enforce or threatening to enforce said act, and such interlocutory injunction shall remain in force until the final hearing and determination of the above entitled suit. Dated at Portland, Oregon, this 31st day of March, 1924."

The case was immediately appealed to the United States Supreme Court, briefs were filed and the oral arguments presented on the 15th and 16th of March, as stated.

The representatives of the state in their appeal held that the district court erred in enjoining the enforcement of the law on thirteen different counts. They raised the question of the power of the federal courts to declare state laws to be in violation of the federal constitution and, therefore, void. They called attention to the two distinct governments within the territorial limits of each state, that each government has its own laws and each has its tribunals for their enforcement. Neither government has the right to encroach upon the proper jurisdiction of the other. They held that the federal government has no power to interfere with a subject of legislation which the United States Constitution let to the states.

The state claimed that the opponents of the Oregon school law object to it on five grounds:

(1) That it impairs the obligation of contracts;

(2) That it abridges the privileges and immunities of the citizens of the United States;

(3) That it deprives persons of property without due process of law;

(4) That it deprives persons of liberty without due process of law; and

(5) That it denies the equal protection of the laws.

The brief combats these five grounds. It states that the obligation of contracts is disposed of by the decision of the United States Supreme Court in the case of Berea College vs. Kentucky, 211 U. S. 45; 53 L. Ed. 81. In this case, it was contended that the obligation of the charter of Berea College was impaired by a Kentucky statute which had the effect of preventing colored students from attending the college, and thus reduced the number of students. The United States Supreme Court decided against the contention. The state of Oregon holds that this is identical with the situation in the private schools in Oregon.

The charge that the Oregon statute violates the privileges and immunities of the citizens of the United States is disposed of in the brief by the contention that there is a distinction between a citizenship of the United States and a citizenship of a state, which are distinct from each other and which depend upon different characteristics and circumstances. The United States Constitution, therefore, which reads "No state shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States" affects citizenship in the United States and not necessarily citizenship in a state.

Depriving persons of property without due process of law, when for the public good, is defended by many decisions in various parts of the United States by which property has been rendered valueless by law, and the laws have been upheld by the Constitution. Property used for the manufacture and sale of liquor, rendered valueless by state and national prohibition acts, is one cited. "The Supreme Court has never held that there was a denial of due process of law where a private business was injured or even destroyed by state competition in a field in which a state might lawfully engage. If a state may engage at all in any field the question of the effect of state competition upon private business is immaterial."

The brief disposes of the argument as to the deprivation of liberty without due process of law by stating that the matter applies to persons, not corporations. In conclusion, the brief presented by the state summarizes, concluding with the following statements: "If the government of the several states have any power to provide for the education of the children within its limits, and if the character of the education of such children is to be entirely dictated by the parents of such children or by those persons by whose influence the parents are controlled, it is hard to assign any limits to the injurious effect from the standpoint of American patriotism which may result....Moreover, if the new Oregon school law is declared to be in violation of the Constitution of the United States, there is no legal principle on which any existing public school law in the United States can be upheld. If a state cannot compel certain children to attend the public schools, it cannot compel any children to do so....The whole matter may be summed up in the single statement that the regulation of education is a subject over which the states have exclusive control and with which the federal government has no authority to interfere. If there is anything objectionable with the state law on the subject of education, the remedy must be sought in the state courts, or by action of the state electorates. This is a problem which each state must and should be left to settle for itself."

The brief for the appellee held that the Oregon law was unconstitutional and void because it violated the provisions of the Constitution of the United States as follows:

1. That the law would deprive the plaintiff of its property without due process of law;

2. That the law would deprive parents of their right to direct and control the education of their children and to deprive children of their right to acquire useful knowledge in private

(Concluded on Page 80)

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(Concluded from Page 78)

schools and to deprive teachers of their right to engage in the useful, lawful, and lucrative occupation of teaching in the eight primary grades in private schools, and it would deprive plaintiff of its right to maintain and conduct schools in Oregon;

3. That the law would impair the obligation of the contract between the state of Oregon and plaintiff arising out of the aforesaid corporation laws of the state and the incorporation of the plaintiff thereunder;

4. That the law would attempt to control the free exercise and enjoyment of religious opinion and interfere with the rights of conscience;

5. That the law would abridge the right of parents in the state of Oregon to send their children to private schools in other states of the Union.

Sixth Conference of Rhode Island School Boards

School board members from all Rhode Island cities and towns assembled in Providence on Friday, May 29, 1925, to attend the sixth semi-annual conference of the Rhode Island Association of Public School Officials. The sessions of this conference of school committee members were held in the halls of the Rhode Island College of Education and included morning and afternoon meetings in addition to a mid-day luncheon.

The glee clubs of the Rhode Island College of Education, directed by Professor Elmer S. Hosmer, furnished the opening number of the day's program. President W. Thomas Bone, clerk of the Narragansett school board, as chairman of the general sessions, formally opened the conference with an address of welcome. "We are met here today to discuss the problems which face school board members in common," he stated. "As school committee members we are the real makers of the nation, for we have in our custody the young people who in a few years will have to take the places of those now at the helm of the state. If we want the next generation of men and women to be law abiding citizens we must assume that the responsibility of providing the present youth with the type of education which will produce such citizens. Let us not fail to get the exalted view of our duties and obligations which the demands of the times would impose upon us. The work of a school board member is a full size man's job and if anyone allows himself to be elected to a place on a school committee with the expectation that he has an easy task before him he is sadly mistaken. We have to deal with the taxpayers in general, the childless taxpayers in particular, the parents and the teachers. From each of these groups I am convinced that the childless taxpayers come forward with the most protests. When one stops to realize that most of these childless taxpayers are descendants from the so-called old line families, it is all the more regrettable that they possess so little of the true American spirit which they should have inherited from a number of generations."

In his message to members of Rhode Island school board members, Dr. Walter E. Ranger, commissioner of education, called attention to the laws concerning education which have been enacted this spring by the state legislature. "Our state assembly has recently passed two resolutions forecasting an advanced program for higher education," said Commissioner Ranger. "One of these resolutions has appropriated $600,000 for a new building for the Henry Barnard school, Rhode Island College of Education, with provision for a bond issue to be submitted to referendum; the other resolution proposes a bond issue of $600,000 to be expended for new buildings and additional equipment at Rhode Island State College. The statute requiring visitation of school by school boards has been amended by relieving the school board and transferring the duty of visitation to the superintendent of schools. This new statute requires an annual report to the school committee covering thirty different matters named in the statute, the detail covering essential facts concerning the physical condition of buildings and equipment with reference to sanitation and safety, and also facts as to the efficiency of teaching. This new statute contemplates an effective annual survey and a report challenging the attention of the school board.

The principal address of the morning was delivered by Professor Frank E. Waite, state inspector of high schools. The title of Professor Waite s speech was "The Needs of Our Rhode Island High Schools." In part Inspector Waite spoke as follows:

"Probably the most outstanding need of our Rhode Island schools is the improvement of the conditions under which our students are now studying. Unless we provide the proper atmosphere for study our pupils cannot do their best work. Unfortunately at the present time many of our schools are not providing adequate and satisfactory places for study. No pupil can do his best studying when he is sitting in the same room in which a class is reciting. Moreover, teachers cannot do their best instructing when they also have to be responsible for pupils who are supposed to be studying. So-called home study in these days is neither home nor study. Books may be carried back and forth daily by pupils but they are not studied at home, except in rare instances. If we really intend to have our high school pupils study intensively and effectively we must provide them with adequate study opportunities to make this study possible. Let there be study halls of reasonable size where study will be the main business to be transacted. In planning our new buildings we should provide study halls and our old buildings should be remodeled to care for this essential.

"Another need of Rhode Island high schools is the proper balancing of classes. Today our classes vary in their membership from four to fifty pupils. Oftentimes the tiny classes are taught by our ablest and most experienced teachers, while the largest and most unwieldy groups are being instructed by our youngest and weakest teachers. Such an arrangement is both unreasonable and inefficient. There should be a better balancing of the membership even though it becomes necessary to drop the smallest classes entirely.

"The next need which I shall call to your attention concerns the relationship which the superintendent bears to the high school principal. In most cases I find that the principal is not being allowed authority to show initiative and resourcefulness as he should be allowed this privilege. Many of our principals are being re-

(Concluded on Page 82)

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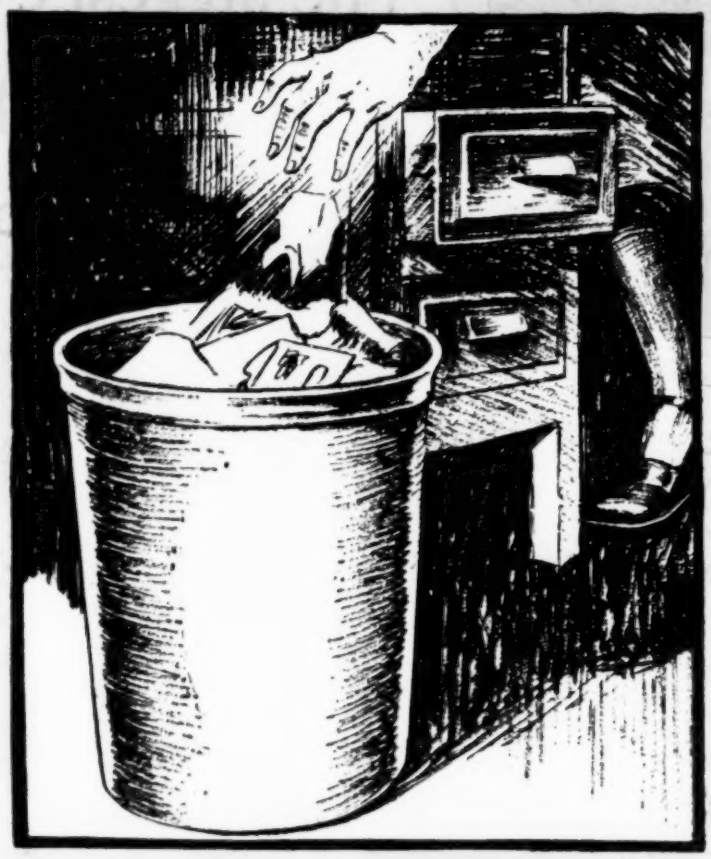

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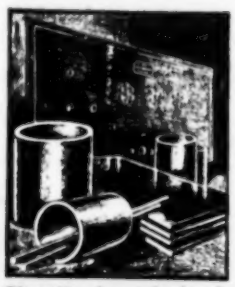

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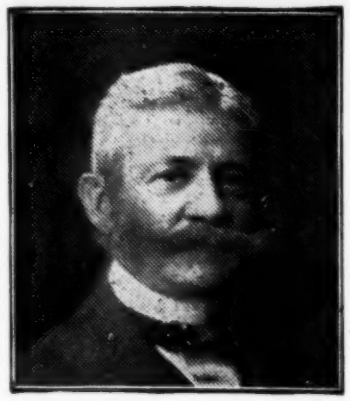

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(Concluded from Page 80)

quired to do too much teaching and thus have too little time left to do efficient supervising. A principal may be allowed to instruct one class a day if time permits but if he teaches much more than that he cannot be truly efficient. We must not make of a high school principal a teacher, a policeman and a clerk if we expect and desire that he administer his school successfully. If we propose to hold our high school principal responsible as an executive we must relieve him of much of his clerical work. A large part of this work can be done well by pupils who are enrolled in the commercial department. Such an arrangement would give these girls excellent office practice and at the same time develop in them the right attitude about keeping information confidential.

"Finally, in our schools there should be less teachers' meeting and more individual teacher conferences. There is nothing more effective in bringing about the solution of a difficult problem than the personal conference between principal and teacher. The principal should keep a visitation book in which are recorded the dates when he visited each teacher, his findings and the action he took in each instance. An account of all personal conferences could also be included in this book."

The afternoon session opened with an address by Attorney Arthur G. Cushing, a member of the North Providence school board. After enumerating and describing the tremendous changes which have taken place in educational matters during the past few years Committeeman Cushing discussed the importance of appointing the right kind of teachers to instruct our children. Educational science has found nothing that will take the place of the personality of the teacher, he asserted. We must have the teacher whose spirit and individuality will inspire the pupils he claimed.

Following Attorney Cushing's address the conference was given over to open discussions of a number of topics which are of particular interest at the present time to members of Rhode Island school boards. Concerning the "Strayer Plan Applied to all Rhode Island Schools", Superintendent Isaac O. Winslow of Providence, said: "A special statute has been enacted providing for a reorganization of the school board in Providence, and readjusting relations between the school committee and the city council. Essentially the law replaces the school board of 33 members by one of seven, elected, without party designation, two at large and five by districts, following non-partisan nomination. The new law permits the school committee to obtain a definite share in the city's general revenue annually, and authorizes larger appropriations, the latter in the discretion of the council. The school committee is given definite control of school buildings already constructed, and provision is made for a referendum on new building programs projected by the school board and not approved. It is difficult to estimate in advance the possibilities for good that lie in the new measure, because so much depends immediately and ultimately upon the school board. The new plan appears to be very promising."

Upon the topic "Securing and Retaining Superior Teachers", Dr. John L. Alger, president of the Rhode Island College of Education, spoke as follows: "Our teachers' college has long tried to secure for training those who will develop into superior teachers. In pursuance of this aim we have decided that from now on admission to the R. I. College of Education shall be determined in the following manner: A definite quota will be agreed upon for each town and city. The school superintendent, with the aid of the secondary schools, may nominate this number from the list of more desirable candidates for future positions in his own schools. He may also nominate half as many alternates. Only those nominated will be eligible for admission to the entrance examination. Final selection from this approved list will be made by the College of Education on the following basis: 1, rank in the competitive test; 2, scholarship as indicated by the high school record; 3, personal fitness for teaching, as indicated by the personal fitness index; 4, position on the list as submitted by the superintendent."

EVERETT C. POTTER.
President Board of Education.
Cranston (Auburn P. O.), R. I.

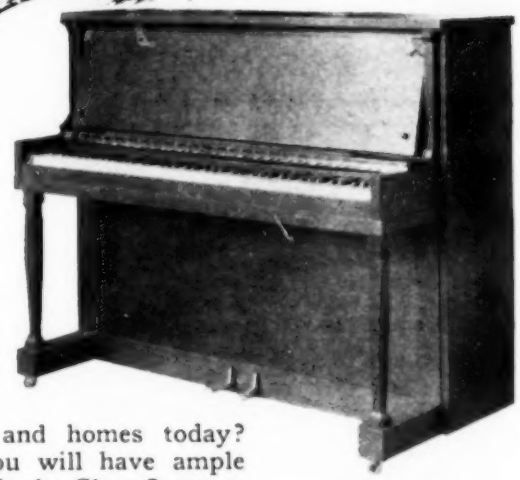
A business meeting concluded the conference, Everett C. Potter of Cranston being elected president. The other officers as named are: Honorary president, Dr. Walter E. Ranger, commissioner of education; vice-presidents, Mrs. Pearl C. Remington, East Providence; William A. Newell, Pawtucket; Robert J. Connery, Bristol; Mrs. Mary T. Brady, Cumberland; E. P. Colson, North Scituate; secretary-treasurer, Robert K. Bennett, Central Falls; executive committee, Elwood T. Wyman, Warwick; James J. Doyle, Central Falls; William H. Eddy, Providence.

Adopts Single Salary Schedule

—Portland, Ore. The board of directors recently approved a resolution providing for increases in the salaries of teachers amounting to about $345,000. The question will come before the voters at the school election in the form of a special tax levy to cover the necessary increase. The schedule adopted requires about $35,000 more than a former one drafted by a special committee and presented to the board for approval at a previous meeting.

The single salary schedule, as adopted, provides that teachers in any department of the schools, whether manual training, domestic science, high or elementary, will receive the same pay for the same amount of preparation. Teachers in high schools with no college degree will be paid the same as grade teachers with no degree and according to the length of time they have been on the staff. The school board is thus definitely committed to the single salary schedule for all teachers.

Two things for you to think about NOW!



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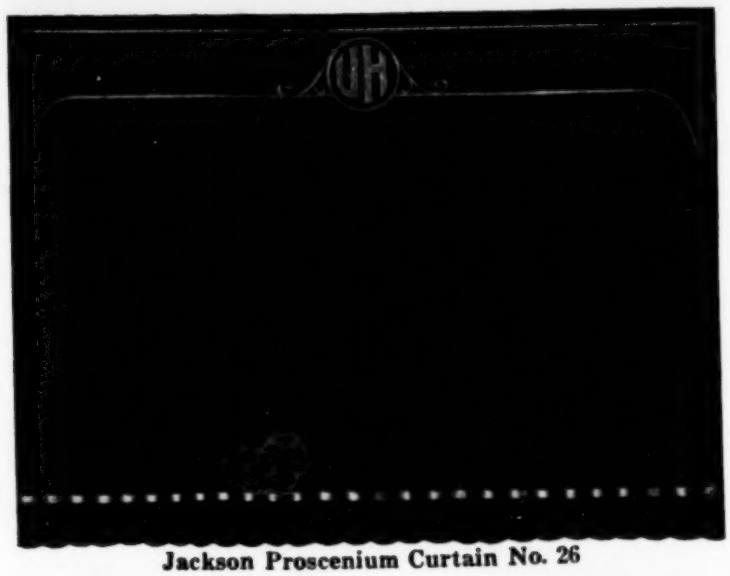

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COMPARATIVE STUDY OF SCHOOL COSTS IN OHIO

Supt C. A. Hudson of Gibsonburg, O., has recently issued a report on the results of a comparative study of school costs in a group of Ohio villages. Questionnaires were sent to fifty village superintendents in various sections of the state for the purpose of comparing school costs, a vital subject in the state at the present time.

The data contained in the report was obtained from eighteen superintendents. The items of school enumeration, average daily attendance, per cent attendance is of population, and per cent high school enrollment is of the total enrollment, all affect school costs. In most villages which have some adjoining rural territory, it is difficult to get the exact population. This is the situation in some of the villages and may account for part of the variation ranging from 13.8 per cent to 27 per cent. The average, 22.5 per cent, is higher than the average of 17.5 per cent as reported in a similar survey of 22 cities in 1924.

The per cent of the high school is of the total enrollment is also an affecting factor, because high school education is more expensive than elementary education. Here the range is from fifteen per cent to 30.3 per cent, with the average 22.8 per cent. The figure of 30.3 per cent for Jefferson is very high, considering that the ideal situation would have but 33⅓ per cent. The average for the 22 cities previously mentioned was 21.8 per cent, slightly less than the average in this study.

The per cent of failures as presented in the report affects school cost in that children require a longer period of time to reach a certain attainment, being held in school by the compulsory attendance laws.

One of the interesting questions, outside of school costs, regarding these failures, which range from 1.1 per cent for Glouster, to 16.6 per cent for Gibsonburg, with an average for all of 8.3 per cent, is why is the per cent so low in some schools, and so high in others? Is it due to superior intelligence in school work, differences in standards of achievement required, teacher-pupil load, teacher training, or still some other factor? A recent survey of the situation under the leadership of Dr. Wallin of the Bureau of Special Education of Miami University, revealed that all of the 23 backward children listed in grades one to six should be in a special or ungraded class where a different type of work may be performed than under the present curriculum. It is easy to see how 16.6 per cent of the first eight grades may be doing failing work each year and not be capable of doing the work of the higher grade. The average of failures in this study is a little below 9.9 per cent average for the 22 cities mentioned.

The per cent of graduates of the high school enrollment also affects the school costs. The school with the best holding power will probably spend more money. The average for the group, 18.1 per cent, is considerably more than that of the 22 cities which have an average of 12.98 per cent.

The report also shows the pupil-teacher ratio in both elementary and secondary schools. Other things being equal, the smaller the size of the classes, the larger the number of teachers that must be employed and consequently the higher the cost. Village schools, as a rule, have a higher ratio than cities. This is substantiated by the facts which show the average for the elementary grades to be 36, and that for the high schools to be 23.7. The figures for the 22 cities are 30.4 and 20 respectively.

Thus far the items affecting school costs which lie within the system itself have been studied. The factors determining school costs, and which lie outside the school are then taken up. Too often in Ohio, it is not actual wealth upon which the levy is made, but upon assessed valuation, which varies so much in different localities. Even if assessed wealth were the actual wealth, there would still be great variance in the villages under consideration. The report gives figures showing the wealth per pupil in average daily attendance to vary from $2,542 for Glouster, to $13,531 for Huron. Other items, such as cost per pupil in average daily attendance, tax rate, debt per pupil in average daily attendance, debt per $1,000 of wealth, all show considerable variation, and indicate the effort that various communities exert in supporting their schools. The cost per pupil in average daily attendance varies from $50 to $102, with the average at $76.13. The average for the 22 cities is $83.33.

NEWS OF OFFICIALS

—At the annual school election held at Canandaigua, N. Y., on May 6th, Dr. A. W. Armstrong, Mr. F. D. Cribb and Mr. Ira N. Croucher were re-elected trustees for a term of three years. Mr. G. M. Kennedy was elected president, and Mr. F. E. Fisk, clerk of the board.

—Dr. B. S. Carpenter has been elected a member of the board of education, to succeed Mr. S. C. King. Dr. C. J. Donald, president of the school board, has been re-elected for a five-year term.

—At a school trustee election held on April 4th, Mr. R. H. Fonville was re-elected president for a term of two years. Judge C. C. Pollard and Mrs. J. Edward Hodges were elected for a term of two years, succeeding J. G. Donovan and Mrs. O. C. Castle.

—Mr. Judson Zimmer, for the past five years president of the board of education at Gloversville, N. Y., has retired. Mr. Zimmer is succeeded by Mr. Ernest Jones, chairman of the finance committee of the board. Mr. Arthur Severn has been elected secretary of the board.

—Mr. George J. Ryan was re-elected in May as president of the New York board of education. Mr. Ryan's office was converted into a bower of flowers, and he received many letters and telegrams of congratulation.

—Col. Edward Ellicott has been elected as president of the Chicago board of education, to succeed Charles M. Moderwell. Vice-president Smietanka, holdover appointee, was chosen vice-president to succeed himself.

—Mr. James C. Magee has been re-elected as one of the school trustees at Hastings-on-Hudson, N. Y. Mr. H. G. Balcom has been elected as president of the board.

—Mr. Lawrence E. Barringer has been re-elected president of the board of education at Schenectady, N. Y.

—Dr. A. B. Clark has been reelected president of the board of education at Joplin, Mo.

—Dr. B. F. Teters, for 35 years a member of the board of education at Middlebury, Ind., has resigned from that body because of ill health. Dr. Teters is succeeded by Harold Hoover.

—Mrs. Mary Wright, Iowa's oldest teacher in point of service, was retired in February, after a service of sixty years. Mrs. Wright began her teaching career in 1864 and had taught continuously since that time.

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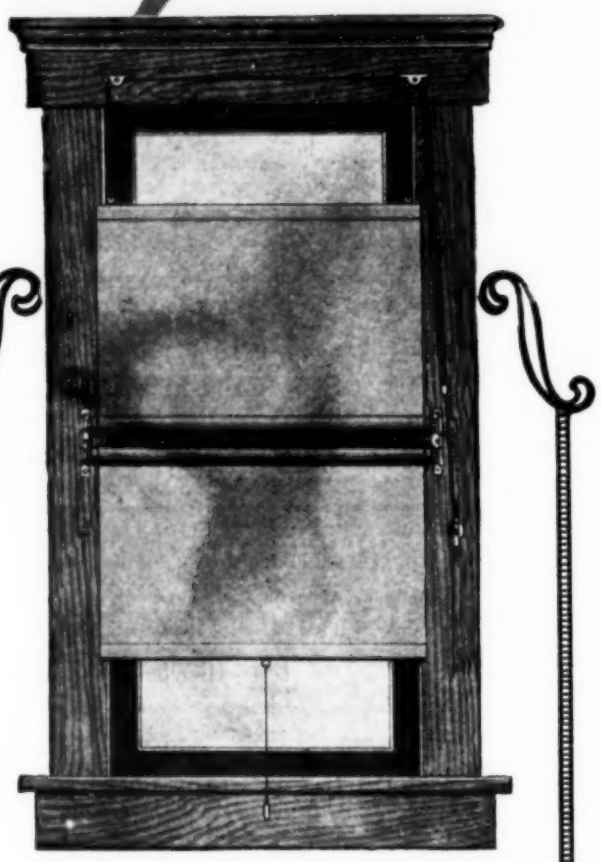

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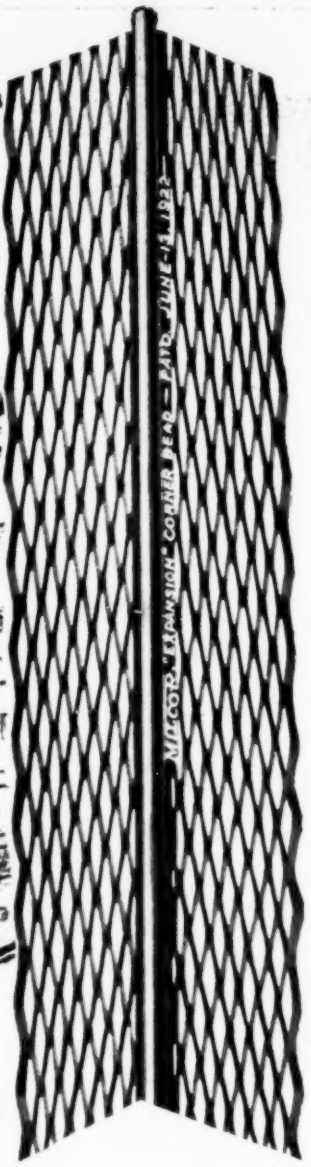

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Publications of Manufacturers for the School Buyer

The business literature published by the various manufacturers covering their products is a valuable aid to the school buyer in the proper selection and purchase of school equipment and supplies. In view of the annual purchase of school equipment and supplies it is particularly timely to review the catalogs issued by the various manufacturers of school goods. Following is a list of the latest manufacturers' publications. These may be secured on request from the manufacturer. In our Directory of Equipment and Supplies contained on pages 171 and 173 the manufacturers are classified under the products they make. This directory furnishes a cross index to the following list of manufacturers alphabetically arranged:

THE AEOLIAN COMPANY, 29 W. 42nd St., New York City, N. Y., manufacturers of Duo Art Reproducing Pianos. Aeolian instruments are described in a 28 page booklet. Their catalog of music for the Duo Art Reproducing Piano contains a complete list of Duo Art Records.

THE AIR CONDITIONING & ENGINEERING CO., 2914 S. Jefferson Ave., St. Louis, Mo., manufacturers of Ozone Generators and Electrozone Air Conditioning Apparatus. Information covering the use of Ozone in air condition as well as actual use in school is included in a series of pamphlets and data issued by this company.

ALBERENE STONE COMPANY, 153 W. 23rd St., New York City, N. Y., quarriers and finishers of Alberene Stone (fine soapstone). The various uses of Alberene Stone are described in their catalog. Its adaptability for stair treads, landings, toilet partitions, shower compartments, table tops and in connection with laboratory and chemistry equipment is shown.

AMERICAN ABRASIVE METALS CO., 50 Church St., New York, N. Y., manufacturers of Feralun Anti-Slip Treads. Their product and its uses is described in an illustrated pamphlet.

AMERICAN BANKING MACHINE CORP., Saginaw, Mich., manufacturers of the Automatic Receiving Teller. The "Manual of Operation," a 16 page booklet 8½ x 11 contains full details covering the Automatic Receiving Teller and its use in schools promoting thrift.

AMERICAN CRAYON COMPANY, Sandusky, Ohio, Manufacturers of crayons, water colors, chalk, art materials. The products of this company are described in a series of booklets and pamphlets. "The Psychology of Chalk" is the title of a 16-page booklet presenting the various kinds of chalk manufactured by this company. "Everyday Art" is a monthly publication issued by this company.

AMERICAN FENCE CONSTRUCTION CO., 130-132 W. 34th St., New York, N. Y., manufacturers of AFCO Fences. "Making Property Private" is the title of an interesting booklet describing and illustrating the installation of their product. Special reference is made to the installation of AFCO Fences for school use, athletic fields and playgrounds.

AMERICAN FOUNDRY & FURNACE CO., Bloomington, Ill., manufacturers of Heating and Ventilating Equipment. The American System of direct transmission air heating for producing heat and ventilation in schools is fully described in a 24 page booklet issued by this company.

AMERICAN PORTABLE HOUSE COMPANY, 601 Alaska St., Seattle, Wash., Manufacturers of Portable School Houses. Portable Bleachers. "Give Every Child a Chance" is the title of a 16-page book (9 x 12) describing American built schools. One, two room and six room schools are shown together with floor plans. "American Semi-Permanent School Houses" with flat roof construction are described in a separate 12-page pamphlet. American Portable Bleachers are shown in an 8-page pamphlet.

AMERICAN SEATING COMPANY, 14 E. Jackson Blvd., Chicago, Ill., manufacturers of School Furniture. The complete line of American Desks is fully described and illustrated in their catalog. This company also carries an extensive line of general school equipment and supplies shown in this catalog.

ANCHOR POST IRON WORKS, 50 Church St., New York City, N. Y., Manufacturers of Iron Fences. "Fences, Gates and Buildings" is a manual containing complete data on fences in a publication (8½x11), 96 pages, known as Specification Manual No. 60.

ANGLE STEEL STOOL COMPANY, Plainwell, Mich. The 1925 catalog published by this company contains complete information on the Steel Stools, chairs, office steel equipment manufactured by this company, 72 pages (8½ x 11).

ANNIN & COMPANY, 99 Fulton St., New York, N. Y., flag manufacturers. Catalog No. 225 contains a list of the various flags and banners manufactured by this company.

A. P. W. PAPER COMPANY, Albany, N. Y., Toilet Paper, Paper Towels, Fixtures. A. P. W. paper products are described in a series of pamphlets. Samples on request.

ASBESTOS BUILDINGS CO., 2013 Market St., Philadelphia, Pa., manufacturers of Ambler Asbestos School Buildings. A 16 page booklet describes the different types of Ambler Asbestos School Buildings made by this company. Detailed specifications covering one and two room schools are included.

ATHEY COMPANY, 6035 West 65th St., Chicago, Ill., Manufacturers of Athey Perennial and cloth-lined metal weatherstrips. These products are described in a series of bulletins published by this company. "Conservation of Eyesight" is the title of a 16 page booklet presenting the efforts of Athey Window Shades in the protection of eyesight.

AUSTRAL WINDOW COMPANY, 101 Park Ave., New York, N. Y. The advantages of Austral Windows, different types and various installations are described in a 32-page booklet (8½ x 11) published by this company.

AUTOMATIC PENCIL SHARPENER COMPANY, 58 E. Washington St., Chicago, Ill., manufacturers of Pencil Sharpeners. Catalog No. 4 describes the APSCO line of pencil sharpeners.

BADGER WIRE & IRON WORKS, 25th and Cleveland, Milwaukee, Wis., manufacturers of Wire Window Guards. Catalog No. 5 describes and fully illustrates the various standard types of wire window guards made by this company as well as the ornamental iron and wire work they produce.

BEARDSLEE-CHANDELIER MFG. CO., 216 So. Jefferson St., Chicago, Ill. Denzar Lighting Fixtures manufactured by this company are described in a 24-page catalog (8 x 10½). Ornamental Denzars designed especially for school buildings are illustrated and described in a new catalog, just published. A series of new, attractive, decorative types are shown as well as the plain types of Denzar for classroom lighting. A section is devoted to exterior lighting showing appropriate designs.

BEAVER PRODUCTS COMPANY, Buffalo, N. Y., manufacturers of Beaver Blackboards. A series of pamphlets published by this company contain detailed information on Beaver Blackboards. Samples of Beaver Blackboards in black and green furnished on request.

BECKLEY-CARDY COMPANY, Chicago, Ill., Manufacturers of school equipment and supplies. The equipment and supplies manufactured and sold by this company are described in catalog No. 38. Separate catalogs are issued as follows: Atlas and Slide Snap Loose Leaf Note Books, Laboratory Apparatus, Blackboards for Schools, Books, Helps and Supplies, Plays and Entertainments, Window Shades, and Pictures and Statuary.

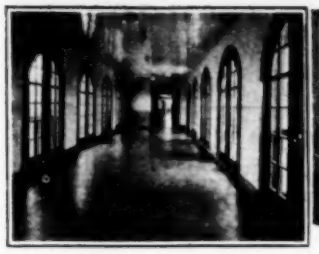
BERGER MFG. COMPANY, 1038 Belden Ave., N. E., Canton, Ohio, manufacturers of Steel Lockers. Berley Steel Lockers in various types and sizes adapted for school use are shown in catalog 15-C, 24 pages, 8½x11.

DANIEL BERMES COMPANY, 287 Park Ave., Union Hill, N. J. Manufacturer of brushes and janitor supplies. A complete line of products manufactured by this company are shown in their new catalog.

BONDED FLOORS, INC., 1421 Chestnut St., Philadelphia, Pa. Manufacturers of Gold Seal Battleship Linoleum. Detailed information covering their products and service, and installations are included in the publications issued by this company.

LOUIS BOSSERT & SONS, INC., Grand St. & Newtown Creek, Brooklyn, N. Y., manufacturers of Portable Schools. "Bossert Houses," their construction and floor plans are shown in a 32 page booklet (8x11).

BRADLEY WASHFOUNTAIN COMPANY, 2203 Sycamore St., Milwaukee, Wis., manufacturers of Washfountains. This specially designed washfountain is described and fully illustrated in a 16 page catalog. Under the title of "Evidence" this company publishes a series of letters from users emphasizing the utility and service of the Bradley Washfountain.



Corridor of Rubberstone.

Northville Sanitarium
Owned and Operated by the City of Detroit
Stratton and Snyder, Architects.

Sun Parlor of Rubberstone.

Sanitation

RUBBERSTONE Tile Flooring is non-absorptive and non-porous. The asphalts in Rubberstone give the tile these unusual properties.

Rubberstone Tile does not originate dust.

It is used in Chemical Laboratories because it is not affected by most acids or alkalies. Marks from inks, cigarettes or burning matches can easily be washed off.

Due to the ductility of Rubberstone, the joints of the tile weld under traffic within a short time, making the floor practically one continuous surface.

For Hospitals, Sanitariums and buildings of like character, Rubberstone gives real satisfactory service.

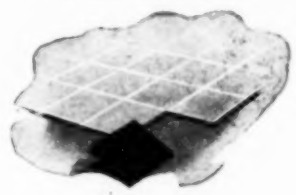
Complete information regarding Rubberstone gladly furnished upon request.

RUBBERSTONE CORPORATION
Executive Offices: 1400 Broadway, New York
Chicago Philadelphia
Distributors in Principal Cities

RUBBERSTONE FLOORS
TRADE MARK REG. U.S. PAT. OFF.
FOR PERMANENCE

SEE OUR CATALOGUE IN SWEETS
Page 496

RUBBERSTONE
A TILE FLOORING



DESCRIPTION

RUBBERSTONE Flooring is made in tile form by the skilful blending of high grade asphalts, asbestos fibre, para rubber and non-fading coloring pigments.

Furnished in tan, olive green, terra cotta red, dark brown and black.

The tile comes in four sizes: 6" x 6", 12" x 12", 12" x 24" and 12" x 36", either 1-8" or 3-16" thick

BUCKEYE-BLOWER COMPANY, Columbus, Ohio. Manufacturers of Heatovent unit system of heating and ventilating. Heatovent is described in detail in an Architects' and Engineers' Data Book (8½ x 11), 32 pages. School installations are shown together with detailed drawings and specifications.

SAMUEL CABOT, INC., Boston, Mass. Manufacturers of Cabot Quilt for sound proofing. The property of Cabot's Quilt, results obtained, and installations are presented in a catalog published by this company. Samples of their products on request.

CHAMBERLAIN METAL WEATHER STRIP CO., INC., 1644 Lafayette Blvd., W., Detroit, Mich., manufacturers of metal weather strips. Detailed information covering the Chamberlain Metal Weather Strips is presented in a 48-page loose leaf catalog conveniently arranged for filing in a standard letter file. Detailed drawings show the standard method of equipping windows and doors with the Chamberlain Metal Weather Strips. General and descriptive specifications are given for each type of equipment. Excluding Cold and Dust with Chamberlain for 32 Years is the title of an interesting 16-page booklet (5 x 7¼) telling the story of Chamberlain organization and policy.

C. CHRISTIANSEN, 2814-42 W. 26th St., Chicago, Ill., manufacturers of Industrial and Laboratory Furniture. Catalog No. 28 describes the manual training equipment as well as the domestic science, sewing and drawing tables manufactured by this company. Catalog No. 29 illustrates their complete line of laboratory furniture.

CIRCLE A PRODUCTS CORP., Newcastle, Ind., manufacturers of Circle A Portable Schools and Circle A Bleachers. The 1925 edition of Circle A School Catalog will prove of considerable interest and value to school officials interested in portable schools. An 8 page pamphlet tells of the utility and service of Circle A Bleachers.

J. R. CLANCY, INC., Syracuse, N. Y., manufacturers of theatrical stage hardware. Catalog No. 33 published by this company will serve as a valuable aid in securing the proper hardware for stage equipment.

JAS. B. CLOW & SONS, Chicago, Ill. Manufacturers of Plumbing Fixtures. "Modern American Schools" is the title of an 88-page catalog covered by this company describing Clow Plumbing Fixtures, their application and installation in schools.

COLUMBIA SCHOOL SUPPLY COMPANY, Indianapolis, Ind., manufacturers of School Furniture, including school desks, auditorium seating, teachers' desks, laboratory tables and supplies. The products of this company are described in their 32 page catalog. Indestructo Sani-Steel School Seating is especially described and illustrated.

THE COMMERCIAL PASTE COMPANY, Columbus, Ohio, manufacturers of Gluey Paste. The 24 page booklet tells of the advantages of Gluey Paste and describes the various other kinds of paste and glues manufactured by this company.

CONRADES MFG. CO., St. Louis, Mo., manufacturers of School Furniture. "The Development of Learning" is the title of an interesting booklet published by this company. Conrades movable chair desks, tablet arm, teachers' and kindergarten chairs are described and illustrated. Catalog No. 025 covers a wide range of office chairs manufactured by this company.

CYCLONE FENCE COMPANY, Waukegan, Ill., manufacturers of Cyclone property protection fences. Catalog No. 16 includes information and specifications covering the various types of fences manufactured by this company. Detailed drawings illustrate the construction and show the method of installation. The iron fences also manufactured by this company are illustrated. Through the Cyclone Fence service this company offers engineering and installation service to assist officials in solving any fencing problem.

P. DERBY & CO., INC., Gardner, Mass., Chair Makers. Derby chairs are described and illustrated in a 32-page booklet (9 x 12). Derby Posture Seating is particularly featured.

DETROIT SCHOOL EQUIPMENT CO., Detroit, Mich. The advantages of the Detroit Movable Desk are presented in a 16-page booklet (6 x 9) under the caption "Movable Desk Superiority."

DETROIT STEEL PRODUCTS CO., 2256 East Grand Blvd., Detroit, Mich., manufacturers of Fenestra Steel Windows. "Architectural Fenestra Steel Windows for Schools," is devoted entirely to the use of Fenestra in school buildings. Suggestions for the daylighting and ventilation of school buildings contained in this booklet will prove of interest and value to school officials and architects. Detailed drawings containing typical installation details are included in this booklet.

JOHN C. DETTRA & COMPANY, Oaks, Pa., flag manufacturers. Catalog No. 21 describes and illustrates the various kinds of flags and banners manufactured by this company. Flags specially suited for school purposes are included.

THE DE VILBISS MFG. CO., Toledo, Ohio, manufacturers of spray painting equipment. The DeVilbiss Spray Painting System is outlined in a pamphlet issued by this company. Their folder shows the large and small portable equipment designed for every painting requirement.

THE DE VRY CORPORATION, 1111 Center St., Chicago, Ill., manufacturers of Motion Picture Projectors. Motion pictures in the schools and the use of a DeVry Motion Picture Projector is fully discussed in an interesting 32 page booklet issued by this company.

W. F. DOUGHERTY, INC., 1009 Arch St., Philadelphia, Pa. Manufacturers of kitchen equipment and utensils. The products of this company are outlined and illustrated in a series of catalogs.

THE DOW COMPANY, 1115 Franklin St., Louisville, Ky., manufacturers of Fire Escapes. The Spiral Fire Escape manufactured by this company as well as other types of fire escapes are described in a 40 page booklet covering their products. General description, architectural advantages as well as special advantages of the Dow Fire Escapes are also contained in pamphlets issued by this company.

LUTHER O. DRAPER SHADE CO., Spiceland, Ind. Manufacturers of the Draper Adjustable Window Shades. The different types of Draper Shades are shown in an interesting catalog published by this company. Schools equipped with Draper Shades are illustrated.

C. A. DUNHAM COMPANY, 230 E. Ohio St., Chicago, Ill., manufacturers of the Dunham System of Heating. The Dunham Hand Book No. 214 contains a wealth of information on the subject of heating. This is a 142 page booklet 3¾x6½.

DURABILT STEEL LOCKER COMPANY, Aurora, Ill., manufacturers of lockers and cabinets. Standard locker specifications compiled by this company serve as an aid to school boards and architects in the purchase of steel lockers. These specifications are contained in a four page pamphlet which also includes a list of school installations made by this company.

DURAFLEX COMPANY, INC., Baltimore, Md., manufacturers of Duraflex-A Flooring. The following pamphlets bound in convenient form issued by this company. "Descriptive booklet or treatise on Duraflex Flooring." "Specifications for the application of Duraflex Flooring on various kinds of surfaces." "Partial List of Installations." "Acoustical report made by the Massachusetts Institute of Technology comparing linoleum and Duraflex." "Flooring Data." "Important Installations in schools and other buildings with a series of letters from users."

DURAND STEEL LOCKER COMPANY, 76 W. Monroe St., Chicago, Ill., manufacturers of Steel Lockers and Shelving. The products of this company are described in two interesting catalogs. Catalog M covering Steel Lockers and catalog O covering Steel Shelving.

THE DURIRON COMPANY, Inc., Dayton, Ohio, manufacturers of Duriron, an acid-proof resistant metal. Duriron and its various uses are described in Bulletin No. 134 published by this company.

ECONOMY SCHOOL FURNITURE CO., Adrian, Mich. Manufacturers of drawing tables, storage cases, sectional filing cabinets. Economy Drawing Tables and Filing Cases are described in a catalog published by this company. 32 pages (7 x 10).

ERIE ART METAL COMPANY, Erie, Pa., manufacturers of Dan-Dee Waste Paper Baskets. Dan-Dee Waste Paper Baskets are made in various shapes and sizes. These are illustrated in the 16 page catalog published by this company.

FINNELL SYSTEM, INC., Hannibal, Mo., manufacturers of Electric Scrubbing Machines. The Finnell System of electric scrubbing is described in a series of pamphlets published by this company. Special reference is made to the Finnell scrubbing machine No. 17 particularly adapted for school purposes. This type of machine freely operates under classroom benches and desks at the same time having ample capacity to economically scrub and clean large corridor space, auditorium floor areas and gymnasiums.

FLINT & WALLING MFG. CO., Kendallville, Ind., manufacturers of pumping equipment for fresh water supply. The products of this company in supplying running water under pressure to schools is fully described in their catalog No. 115.

GILLIS & GEOHEGAN, 537 West Broadway, New York City, N. Y. Manufacturers of Ash Hoists. G. & G. Telescopic Hoists are described in a 20-page booklet (8½ x 11). Complete specifications are included with illustrations showing the type adapted to meet every type of building.

GLOBE VENTILATOR CO., 205 River St., Troy, N. Y., manufacturers of ventilators. The construction, operation and the various installations of Globe Ventilators are shown in a 32 page booklet published by this company.

(Continued on Page 91)

LYON STEEL LOCKERS

Why Not a Locker Room Like This?

Lyon Steel Lockers are not restricted to corridor or cloak room installations. Here's a picture that shows a gymnasium locker room equipped with Lyon Steel Lockers and Basket Racks.

This locker room not only looks fine today but will keep its good looks for years. Depreciation need not be considered here.

Lyon Steel Locker Doors cannot be injured by being pushed back or slammed shut. Special construction features give ample protection against such common abuses. The frames of Lyon Steel Lockers are strong and stay in alignment. The finish is lasting. The locks are strong and positive. The doors cannot be forced open when locked. The high quality and permanency of Lyon Steel Lockers are recognized throughout the educational and industrial world. They are the preferred line of lockers — a preference built on twenty-five years of steady service.

For any locker installation, large or small, there is no better investment than Lyon.

Your plans now may be in just the stage where complete information about Lyon equipment will be most valuable to you. With a nation-wide experience we should be able to help you. Write us about your requirements.

Lyon Metallic Manufacturing Company

Aurora — Illinois

BOSTON 161 Devonshire St.
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PHILADELPHIA 1319 Filbert St.
CLEVELAND 815 Superior Ave.
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ROCHESTER 61 South Avenue
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LYON STEEL PRODUCTS

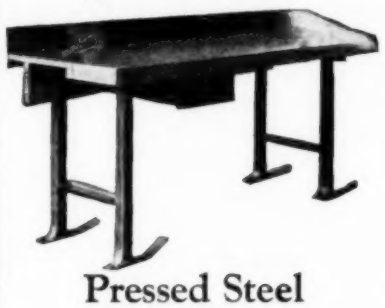
for every storage need

Lupton Steel Display Shelving used as book shelves
Easily moved or expanded as occasion demands

Steel Equipment *for* Schools

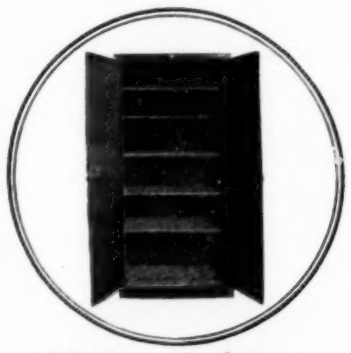
Unit Shelving

This type is for use in the class room, supply room, or engineer's quarters. It is especially convenient for storing small supplies. Shipped completely assembled, in units, ready for immediate use.



Pressed Steel Bench Legs

These light, strong bench legs are just the thing for the manual training workbench. They accommodate 26-inch to 33-inch tops.



Utility Cabinet

The all-steel Utility Cabinet meets the need for a strong, durable container which may be securely locked. It is adaptable to the storing of manual training tools, scientific instruments, clothes or other valuables.

Durable

Lupton all-steel equipment is made to withstand years of hard wear. It is rigid, strong, and proof against splintering, warping or rotting. Simple in design, it harmonizes with practically any surrounding, and the bake-on velvet-green finish of enamel is always pleasing.

Convenient

Lupton all-steel equipment is convenient because it is easily erected or moved; it can be uniformly expanded to meet growing needs; and it requires practically no upkeep. It is also easy to clean, easy to use, and saves room because it provides 10% to 30% more useful space than similar wood equipment.

Write for literature.

DAVID LUPTON'S SONS COMPANY

2205 E. Allegheny Ave.
Philadelphia

These Lockers Retain Their Finish Indefinitely

THE standard French Gray or Olive Green baked-on enamel with which Durand Steel Lockers are finished will not fade, crack or become sticky.

These finishes are put on in two coats. Each coat is thoroughly baked on to the steel at a high temperature. Before enameling Durand Steel Lockers are thoroughly cleaned by an acid bath to assure a gripping surface for the enamel. Durand finishes are always smooth, hard, lustrous and easy to keep clean.

The Durand "M" Catalog gives a detailed description of Durand Steel Lockers and illustrates their sizes and application to various installations.

A copy will be sent upon request.

DURAND STEEL LOCKER CO.

1501 Ft. Dearborn Bank Bldg., Chicago
1325 Pennsylvania Bldg., New York City
5-1501 General Motors Bldg., Detroit
2415 First Nat'l Bank Bldg., Pittsburgh
1006-220 South 16th St., Philadelphia
201 W. 15th Street, Los Angeles

DURAND

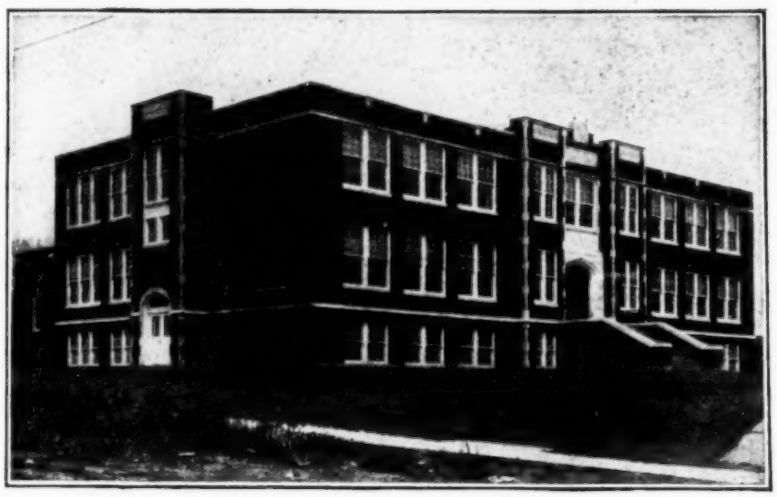
LOCKERS BINS **STEEL** SHELVING RACKS

ELECTRIC TIME and PROGRAM CLOCK SYSTEMS

The cut shows a recent Landis installation, consisting of Master Clock, Program Machine, Program Bells, Secondary Clocks, Storage Batteries, Charging Equipment, etc.

This School has recognized the merits of Landis apparatus and is now enjoying the benefits of an installation of this kind.

Let us go into the matter with you for that new School. Write today for literature. Ask your Architect to specify Landis apparatus and see that it is installed under Landis supervision, insuring quality, economy and service. Write nearest office.



A Recent Landis Installation
High School, Byesville, Ohio
F. S. Rusk, Archt., Columbus, O.

LANDIS ENGINEERING AND MANUFACTURING COMPANY

423 Board of Trade Bldg., Indianapolis, Ind.

Waynesboro, Pa.

(Continued from Page 88)

GREENFIELD TAP & DIE CORP., Greenfield, Mass., manufacturers of woodworking and metal working lathes. Bulletin No. 104, 16 page booklet, describes the principal features and gives details and specifications covering the lathes manufactured by this company.

THE GUNN FURNITURE COMPANY, Grand Rapids, Mich., manufacturers of Gunn Lino Desks and Tops and Sectional Bookcases. Catalog D-5 describes the complete line of Gunn Lino Desks. A special pamphlet published by this company calls special attention to the Gunn Lino Desks for use in schools.

THE EDWIN F. GUTH COMPANY, St. Louis, Mo., manufacturers of Brascolite Fixtures and Lighting Equipment. Brascolite Fixtures for schools as well as Guth Lighting Equipment in general are illustrated and described in catalog No. 15. This is a 96 page catalog (8½ x 11) showing a varied assortment of luminaires suitable for every type of building.

J. L. HAMMETT COMPANY, Kendall Square, Cambridge, Mass. The catalog of School Supplies published by this company furnishes a complete and convenient reference to practically every kind of equipment and supplies used in schools.

HANSEN MFG. COMPANY, Princeton, Ind., manufacturers of Program Clocks. The Hansen catalog of 32 pages contains detailed information covering the Hansen Signal System for school installation.

STEWART HARTSHORN CO., 250 5th Ave., New York, N. Y., manufacturers of Spring Shade Rollers and Shade Cloth. The various kinds of Hartshorn Shade Rollers and their adaptability for school use is shown in a 32 page booklet published by this company. "Shade Craft and Harmonious Decoration" is the title of another booklet this company has issued. Samples of the various shade cloth furnished on request.

PHILIP HAAS COMPANY, Dayton, Ohio, manufacturers of Flush Valves, Automatic and Frost Proof Closets. Catalog B published by this Company emphasizes the features of the Universal Flush Valve and the Universal Seat Action Flush Valve. Complete data on the measurements for all styles of installations included.

HEYWOOD-WAKEFIELD CO., 209 Washington St., Boston 9, Mass., manufacturers of Pressed Steel School Furniture. The various types and kinds of school desks manufactured by this company are shown in a 24 page illustrated booklet.

CHAS. M. HIGGINS & CO., 271 9th St., Brooklyn, N. Y., manufacturers of Inks and Adhesives. A 32 page booklet published by this company contains complete information on Higgins Inks and Adhesives.

HILL-STANDARD COMPANY, Anderson, Ind. Manufacturers of Playground equipment. The Fun-Ful line of playground equipment manufactured by this company is shown in a finely illustrated and comprehensive catalog. Detailed illustrations show the construction of this line of playground equipment.

THE HOCKADAY COMPANY, 1823 Carroll Ave., Chicago, Ill. Manufacturers of Hockaday System of Finishing Walls. Under the title "Hockaday Paint Mileage" the products of this company and their system of finishing walls is described in an interesting manner. Illustrations showing the various types of buildings finished with Hockaday are included. Detailed specifications covering every kind of surface for which Hockaday is adapted.

HOFFMANN & BILLINGS MFG. CO., 109 Second St., Milwaukee, Wis., manufacturers of shower bath equipment. Niedecken Shower Stalls, Niedecken Mixers are described in detail in Bulletin 220 N. A., 80 pages, 4x7.

THE HOLDEN PATENT BOOK COVER CO., Springfield, Mass. Manufacturers of book covers. The Holden Book Covers shown to the school buyers in the form of actual samples covering the different kinds and sizes.

THE HOLTZER-CABOT ELECTRIC COMPANY, Boston, Mass. Manufacturers of Fire Alarm Systems, Telephone Systems, Program Bells. These products are described in a series of booklets: Telephone Systems for Schools, booklet No. 14800; Program Bells for Schools, booklet No. 15103A; Fire Alarm Systems for Schools, booklet No. 16304A.

IMPERIAL DESK COMPANY, Evansville, Ind., manufacturers of office desks and teachers' desks. A 64 page booklet 11x8 is issued by this company describing Imperial Desks and shows the style, grade, and price for every school requirement.

INNER BRACED SALES CO., Indianapolis, Ind., manufacturers of Inner Braced Movable Chair Desks, Tablet Arm Chairs. The products of this company are shown in a four page pamphlet. Illustrations show the continuous steel rod bracing which is a feature of Inner Braced furniture.

IROQUOIS PUBLISHING COMPANY, Syracuse, N. Y., book publishers. Manufacturers of book covers. The 1925 catalog of this company covers their list of books and features Neatfit Adjustable Book Covers.

A. P. JACKSON CORP., 272 No. Main St., Herkimer, N. Y., manufacturers of stage equipment and curtains. Special drawings and sketches are submitted by this company to prospective purchasers as a means of presenting their products and service to meet the various school requirements.

JOHNSON SERVICE COMPANY, Milwaukee, Wis., manufacturers of Automatic Temperature Regulation. The Johnson System of Temperature and Humidity Control is described in an interesting and non-technical style in an 80 page catalog published by this company. This catalog covers every phase of temperature and humidity control. The Dual Thermostat, a new product of this company is described in a supplement to the general catalog.

K-M SUPPLY COMPANY, 123 W. 8th St., Kansas City, Mo., manufacturers of the Miller School Wardrobe and the Trascher Teacher's Swinging Blackboard. The Miller Wardrobe designed especially for school use is shown in a series of illustrations in color contained in a 20 page booklet. Detailed specifications are also included. Catalog T-1 describes the Trascher Teacher's Swinging Blackboard illustrating its advantages in the classroom.

KANSAS CITY SCENIC COMPANY, 1002 E. 24th St., Kansas City, Mo., manufacturers of Scenery and Stage Equipment. The scenery and stage equipment furnished by this company is shown in the 28 page booklet.

KEWANEE BOILER COMPANY, Kewanee, Ill., manufacturers of boilers and water heaters. The products of the Kewanee Boiler Company are described in a series of catalogs as follows: Catalog No. 78 describes Kewanee Firebox Boilers. General catalog No. 80 includes detailed information on Firebox Boilers, Tabasco Water Heaters, Water Heating Garbage Burners and Radiators. "Selecting the Heating Boiler" is the title of an interesting booklet covering this subject.

KNOWLES MUSHROOM VENTILATOR COMPANY, 202 Franklin St., New York, N. Y., manufacturers of the Knowles Fresh Air Diffusers. The ventilation of auditoriums through the use of Knowles Mushroom Fresh Air Diffusers is covered in an eight page pamphlet published by this company. The Gallery Riser Ventilator, a new device of this company, is also described in this pamphlet.

THE THEODOR KUNDTZ COMPANY, Cleveland, Ohio, manufacturers of school furniture and auditorium seating. The new Fiftieth Anniversary School Furniture Catalog published by this company tells the story of their progress and service during the past 50 years to the schools of this country. Information and illustrations covering the complete line of Eclipse furniture contained in this catalog furnish a convenient reference in selecting school furniture.

KEWAUNEE MFG. COMPANY, Kewaunee, Wis., manufacturers of Laboratory, Drafting Room and Manual Training Furniture. The Kewaunee book of Laboratory Furniture (400 pages) is a complete reference covering every phase of laboratory planning and equipment. Kewaunee Drafting Room and Manual Training Furniture are described in a 56 page catalog.

LANDIS ENGINEERING & MFG. CO., Waynesboro, Pa., manufacturers of electric time and program clock systems. Landis service and Landis products are outlined in a 48 page booklet (4x9).

LEE LASH STUDIOS, Mt. Vernon, N. Y., stage scenery and equipment. The work of the Lee Lash Studios is set forth in a 16 page booklet

LIBRARY BUREAU, 230 Albany St., Cambridge, Mass. School Libraries is the title of a 40-page booklet (8 x 10) published by this company, describing Library Bureau furniture and supplies for the school library. Practical suggestions contained in this book include floor plans and specifications.

DAVID LUPTON'S SONS CO., Philadelphia, Pa., manufacturers of Pivoted Sash, Casement Windows, Steel Shelving. Lupton steel products are described in the following booklets: Catalog 12-A Lupton Pivoted Sash Specifications and Installation Details, Catalog C-122 describing Lupton Casements of Copper Steel with specifications and installation details. Folder No. 807 describes Lupton Steel Equipment for school libraries.

LYON METALLIC MFG. CO., Aurora, Ill., manufacturers of Steel Lockers. The Lyon Hand Book of Steel Lockers presents a very complete line of steel lockers designed especially for school use. It not only gives complete description of single tier lockers, double tier lockers, compartment lockers, box lockers, basket racks, but also includes locker benches, wardrobe cabinets, standard cabinets and janitor cabinets which this firm manufactures.

P. A. MaGIRL FOUNDRY & FURNACE WORKS, Bloomington, Ill., manufacturers of heating and ventilating systems. The National System manufactured by this company is covered in a six page pamphlet showing typical installations.

Lupton Steel Display Shelving used as book shelves
Easily moved or expanded as occasion demands

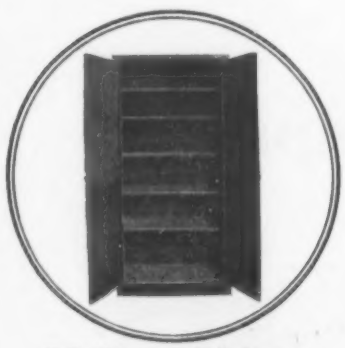
Steel Equipment *for* Schools

Unit Shelving

This type is for use in the class room, supply room, or engineer's quarters. It is especially convenient for storing small supplies. Shipped completely assembled, in units, ready for immediate use.

Pressed Steel Bench Legs

These light, strong bench legs are just the thing for the manual training work-bench. They accommodate 26-inch to 33-inch tops.



Utility Cabinet

The all-steel Utility Cabinet meets the need for a strong, durable container which may be securely locked. It is adaptable to the storing of manual training tools, scientific instruments, clothes or other valuables.

Durable

Lupton all-steel equipment is made to withstand years of hard wear. It is rigid, strong, and proof against splintering, warping or rotting. Simple in design, it harmonizes with practically any surrounding, and the bake-on velvet-green finish of enamel is always pleasing.

Convenient

Lupton all-steel equipment is convenient because it is easily erected or moved; it can be uniformly expanded to meet growing needs; and it requires practically no upkeep. It is also easy to clean, easy to use, and saves room because it provides 10% to 30% more useful space than similar wood equipment.

Write for literature.

DAVID LUPTON'S SONS COMPANY

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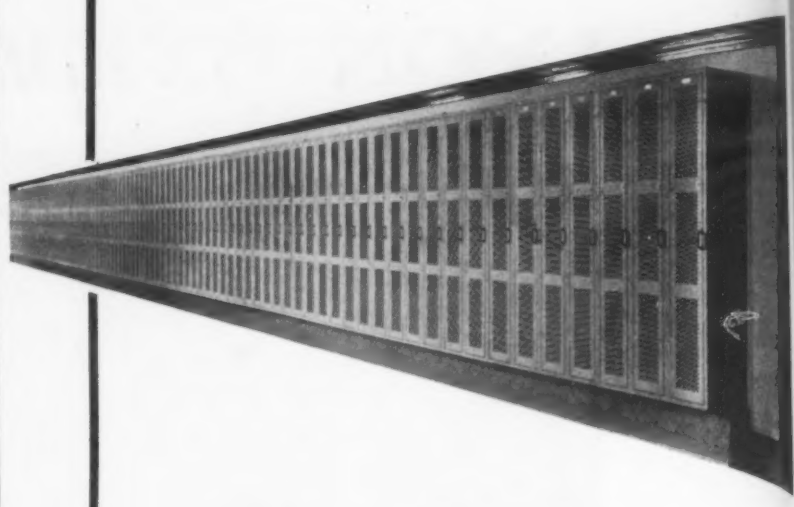
Philadelphia



These Lockers Retain Their Finish Indefinitely

THE standard French Gray or Olive Green baked-on enamel with which Durand Steel Lockers are finished will not fade, crack or become sticky.

These finishes are put on in two coats. Each coat is thoroughly baked on to the steel at a high temperature. Before enameling Durand Steel Lockers are thoroughly cleaned by an acid bath to assure a gripping surface for the enamel. Durand finishes are always smooth, hard, lustrous and easy to keep clean.

The Durand "M" Catalog gives a detailed description of Durand Steel Lockers and illustrates their sizes and application to various installations.

A copy will be sent upon request.

DURAND STEEL LOCKER CO.

1501 Ft. Dearborn Bank Bldg., Chicago
2415 First Nat'l Bank Bldg., Pittsburgh
1325 Pennsylvania Bldg., New York City
1006-220 South 16th St., Philadelphia
5-1501 General Motors Bldg., Detroit
201 W. 15th Street, Los Angeles

DURAND

LOCKERS BINS **STEEL** SHELVING RACKS

ELECTRIC TIME and PROGRAM CLOCK SYSTEMS

The cut shows a recent Landis installation, consisting of Master Clock, Program Machine, Program Bells, Secondary Clocks, Storage Batteries, Charging Equipment, etc.

This School has recognized the merits of Landis apparatus and is now enjoying the benefits of an installation of this kind.

Let us go into the matter with you for that new School. Write today for literature. Ask your Architect to specify Landis apparatus and see that it is installed under Landis supervision, insuring quality, economy and service. Write nearest office.

A Recent Landis Installation
High School, Byesville, Ohio
F. S. Rusk, Archt., Columbus, O.

LANDIS ENGINEERING AND MANUFACTURING COMPANY

423 Board of Trade Bldg., Indianapolis, Ind.

Waynesboro, Pa.

(Continued from Page 88)

GREENFIELD TAP & DIE CORP., Greenfield, Mass., manufacturers of woodworking and metal working lathes. Bulletin No. 104, 16 page booklet, describes the principal features and gives details and specifications covering the lathes manufactured by this company.

THE GUNN FURNITURE COMPANY, Grand Rapids, Mich., manufacturers of Gunn Lino Desks and Tops and Sectional Bookcases. Catalog D-5 describes the complete line of Gunn Lino Desks. A special pamphlet published by this company calls special attention to the Gunn Lino Desks for use in schools.

THE EDWIN F. GUTH COMPANY, St. Louis, Mo., manufacturers of Brascolite Fixtures and Lighting Equipment. Brascolite Fixtures for schools as well as Guth Lighting Equipment in general are illustrated and described in catalog No. 15. This is a 96 page catalog (8½ x 11) showing a varied assortment of luminaires suitable for every type of building.

J. L. HAMMETT COMPANY, Kendall Square, Cambridge, Mass. The catalog of School Supplies published by this company furnishes a complete and convenient reference to practically every kind of equipment and supplies used in schools.

HANSEN MFG. COMPANY, Princeton, Ind., manufacturers of Program Clocks. The Hansen catalog of 32 pages contains detailed information covering the Hansen Signal System for school installation.

STEWART HARTSHORN CO., 250 5th Ave., New York, N. Y., manufacturers of Spring Shade Rollers and Shade Cloth. The various kinds of Hartshorn Shade Rollers and their adaptability for school use is shown in a 32 page booklet published by this company. "Shade Craft and Harmonious Decoration" is the title of another booklet this company has issued. Samples of the various shade cloth furnished on request.

PHILIP HAAS COMPANY, Dayton, Ohio, manufacturers of Flush Valves, Automatic and Frost Proof Closets. Catalog B published by this Company emphasizes the features of the Universal Flush Valve and the Universal Seat Action Flush Valve. Complete data on the measurements for all styles of installations included.

HEYWOOD-WAKEFIELD CO., 209 Washington St., Boston 9, Mass., manufacturers of Pressed Steel School Furniture. The various types and kinds of school desks manufactured by this company are shown in a 24 page illustrated booklet.

CHAS. M. HIGGINS & CO., 271 9th St., Brooklyn, N. Y., manufacturers of Inks and Adhesives. A 32 page booklet published by this company contains complete information on Higgins Inks and Adhesives.

HILL-STANDARD COMPANY, Anderson, Ind. Manufacturers of Playground equipment. The Fun-Ful line of playground equipment manufactured by this company is shown in a finely illustrated and comprehensive catalog. Detailed illustrations show the construction of this line of playground equipment.

THE HOCKADAY COMPANY, 1823 Carroll Ave., Chicago, Ill. Manufacturers of Hockaday System of Finishing Walls. Under the title "Hockaday Paint Mileage" the products of this company and their system of finishing walls is described in an interesting manner. Illustrations showing the various types of buildings finished with Hockaday are included. Detailed specifications covering every kind of surface for which Hockaday is adapted.

HOFFMANN & BILLINGS MFG. CO., 109 Second St., Milwaukee, Wis., manufacturers of shower bath equipment. Niedecken Shower Stalls, Niedecken Mixers are described in detail in Bulletin 220 N. A., 80 pages, 4x7.

THE HOLDEN PATENT BOOK COVER CO., Springfield, Mass. Manufacturers of book covers. The Holden Book Covers shown to the school buyers in the form of actual samples covering the different kinds and sizes.

THE HOLTZER-CABOT ELECTRIC COMPANY, Boston, Mass. Manufacturers of Fire Alarm Systems, Telephone Systems, Program Bells. These products are described in a series of booklets: Telephone Systems for Schools, booklet No. 14800; Program Bells for Schools, booklet No. 15103A; Fire Alarm Systems for Schools, booklet No. 16304A.

IMPERIAL DESK COMPANY, Evansville, Ind., manufacturers of office desks and teachers' desks. A 64 page booklet 11x8 is issued by this company describing Imperial Desks and shows the style, grade, and price for every school requirement.

INNER BRACED SALES CO., Indianapolis, Ind., manufacturers of Inner Braced Movable Chair Desks, Tablet Arm Chairs. The products of this company are shown in a four page pamphlet. Illustrations show the continuous steel rod bracing which is a feature of Inner Braced furniture.

IROQUOIS PUBLISHING COMPANY, Syracuse, N. Y., book publishers. Manufacturers of book covers. The 1925 catalog of this company covers their list of books and features Neatfit Adjustable Book Covers.

A. P. JACKSON CORP., 272 No. Main St., Herkimer, N. Y., manufacturers of stage equipment and curtains. Special drawings and sketches are submitted by this company to prospective purchasers as a means of presenting their products and service to meet the various school requirements.

JOHNSON SERVICE COMPANY, Milwaukee, Wis., manufacturers of Automatic Temperature Regulation. The Johnson System of Temperature and Humidity Control is described in an interesting and non-technical style in an 80 page catalog published by this company. This catalog covers every phase of temperature and humidity control. The Dual Thermostat, a new product of this company is described in a supplement to the general catalog.

K-M SUPPLY COMPANY, 123 W. 8th St., Kansas City, Mo., manufacturers of the Miller School Wardrobe and the Trascher Teacher's Swinging Blackboard. The Miller Wardrobe designed especially for school use is shown in a series of illustrations in color contained in a 20 page booklet. Detailed specifications are also included. Catalog T-1 describes the Trascher Teacher's Swinging Blackboard illustrating its advantages in the classroom.

KANSAS CITY SCENIC COMPANY, 1002 E. 24th St., Kansas City, Mo., manufacturers of Scenery and Stage Equipment. The scenery and stage equipment furnished by this company is shown in the 28 page booklet.

KEWANEE BOILER COMPANY, Kewanee, Ill., manufacturers of boilers and water heaters. The products of the Kewanee Boiler Company are described in a series of catalogs as follows: Catalog No. 78 describes Kewanee Firebox Boilers. General catalog No. 80 includes detailed information on Firebox Boilers, Tabasco Water Heaters, Water Heating Garbage Burners and Radiators. "Selecting the Heating Boiler" is the title of an interesting booklet covering this subject.

KNOWLES MUSHROOM VENTILATOR COMPANY, 202 Franklin St., New York, N. Y., manufacturers of the Knowles Fresh Air Diffusers. The ventilation of auditoriums through the use of Knowles Mushroom Fresh Air Diffusers is covered in an eight page pamphlet published by this company. The Gallery Riser Ventilator, a new device of this company, is also described in this pamphlet.

THE THEODOR KUNDTZ COMPANY, Cleveland, Ohio, manufacturers of school furniture and auditorium seating. The new Fiftieth Anniversary School Furniture Catalog published by this company tells the story of their progress and service during the past 50 years to the schools of this country. Information and illustrations covering the complete line of Eclipse furniture contained in this catalog furnish a convenient reference in selecting school furniture.

KEWAUNEE MFG. COMPANY, Kewaunee, Wis., manufacturers of Laboratory, Drafting Room and Manual Training Furniture. The Kewaunee book of Laboratory Furniture (400 pages) is a complete reference covering every phase of laboratory planning and equipment. Kewaunee Drafting Room and Manual Training Furniture are described in a 56 page catalog.

LANDIS ENGINEERING & MFG. CO., Waynesboro, Pa., manufacturers of electric time and program clock systems. Landis service and Landis products are outlined in a 48 page booklet (4x9).

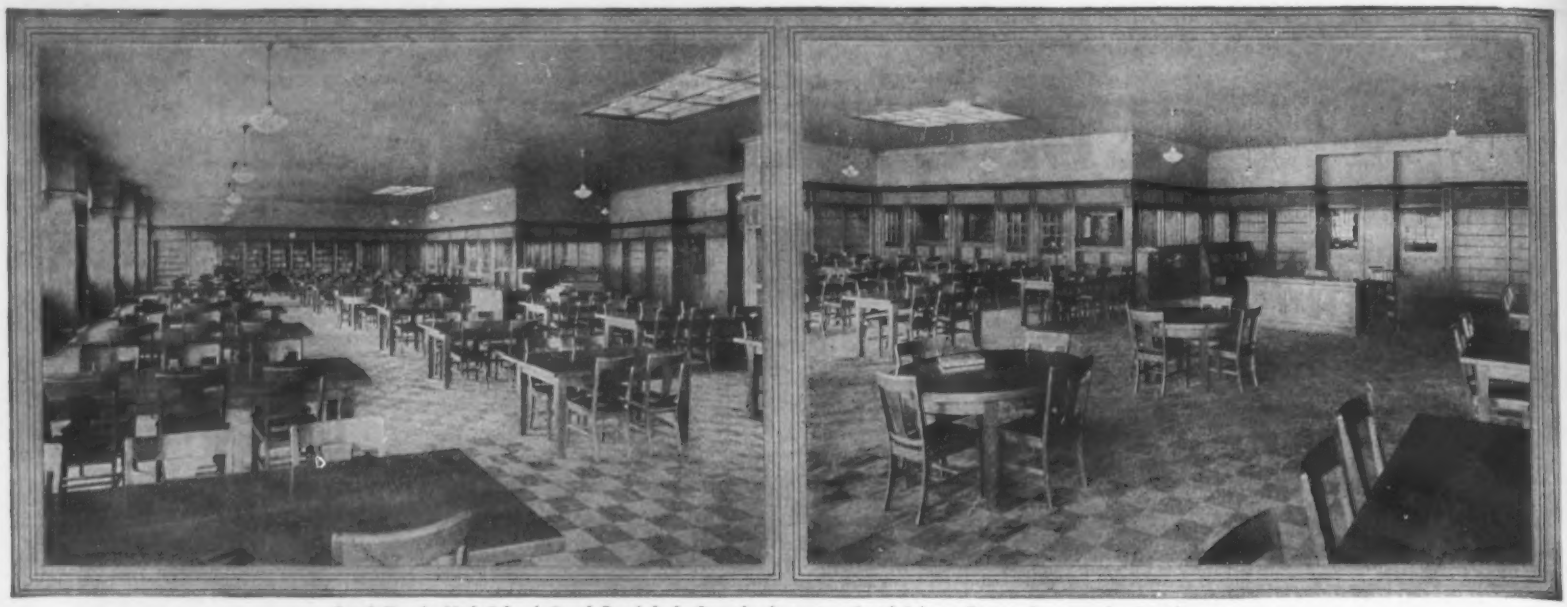
LEE LASH STUDIOS, Mt. Vernon, N. Y., stage scenery and equipment. The work of the Lee Lash Studios is set forth in a 16 page booklet

LIBRARY BUREAU, 230 Albany St., Cambridge, Mass. School Libraries is the title of a 40-page booklet (8 x 10) published by this company, describing Library Bureau furniture and supplies for the school library. Practical suggestions contained in this book include floor plans and specifications.

DAVID LUPTON'S SONS CO., Philadelphia, Pa., manufacturers of Pivoted Sash, Casement Windows, Steel Shelving. Lupton steel products are described in the following booklets: Catalog 12-A Lupton Pivoted Sash Specifications and Installation Details, Catalog C-122 describing Lupton Casements of Copper Steel with specifications and installation details. Folder No. 807 describes Lupton Steel Equipment for school libraries.

LYON METALLIC MFG. CO., Aurora, Ill., manufacturers of Steel Lockers. The Lyon Hand Book of Steel Lockers presents a very complete line of steel lockers designed especially for school use. It not only gives complete description of single tier lockers, double tier lockers, compartment lockers, box lockers, basket racks, but also includes locker benches, wardrobe cabinets, standard cabinets and janitor cabinets which this firm manufactures.

P. A. MaGIRL FOUNDRY & FURNACE WORKS, Bloomington, Ill., manufacturers of heating and ventilating systems. The National System manufactured by this company is covered in a six page pamphlet showing typical installations.



South East Jr. High School, South Bend, Ind. Completely equipped with Library Bureau furniture, bookstacks, etc.

WHAT is the final cost?

In planning your school library you will want to look years ahead. For it's not the original cost but the final cost through years of severe usage that determines the real value of the equipment you buy.

It is Library Bureau's particular pride that all L.B. library products are so carefully built that we can and do guarantee them forever against splitting, warping or any other defects.

The continued use of L. B. Library equipment in thousands of libraries for 20, 30, even 40 years is ample testimony to the real value to be found only in L. B. products.

You can benefit from L.B.'s 50 years of library experience by getting in touch with an L. B. salesman. He is a specialist in library furniture needs and will give valuable assistance without obligation. Just write the nearest library department listed below.

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Chicago, *214 West Monroe St.*
New York, *380 Broadway*

Library Bureau

Los Angeles, *McKee & Wentworth, 759 S. Los Angeles St.*
San Francisco, *McKee & Wentworth, 39 Second St.*

LIBRARY FURNITURE AND SUPPLIES FOR EVERY SCHOOL NEED · · · THE CHOICE OF AMERICAN LIBRARIANS

MANUFACTURERS GLASS COMPANY, 38 S. Dearborn St., Chicago, Ill., manufacturers of pressed lens glass products. The pressed lens glass, its use and installations in schools are contained in a series of pamphlets issued by this company.

MATTHEWS GAS MACHINE COMPANY, 6 E. Lake St., Chicago, Ill., manufacturers of gas producing machines. "Rural Gas Plants" is the title of a 20 page booklet published by this company showing the adaptability and use of their equipment for use in schools.

S. A. MAXWELL & CO., INC., 3636 Iron St., Chicago, Ill., manufacturers of window shades. The products of this company covering window shades, shade cloth, shade rollers and accessories are contained in their annual catalog No. 208. AIRANLITE Double Roll Window Shades are described in separate pamphlets.

FRED MEDART MFG. CO., St. Louis, Mo., manufacturers of Gymnasium and Playground Apparatus. Medart products are described in the following catalogs. Catalog L-3 Gymnasium Apparatus including the complete line of Medart apparatus, furnishings and supplies. This catalog includes typical plans and layouts for various gymnasium games. Catalog M-2 Playground Apparatus. This publication represents the complete line of Medart outdoor playground apparatus including specifications and supplies for purchasing. Catalog A-9, Steel Lockers and Cabinets. Medart Lockers, gymnasium baskets and shelving, combination lockers, steel cabinets, wardrobes, book racks and library shelving are described in this catalog. Catalog S-2 describes Medart Steel Shelving showing the entire line of Medart Steel Products. Medart Book Rack Shelving known as "O" type is described in this catalog. The Medart Company call attention to the new grained finishes covering their steel shelving and lockers, namely, grained walnut and grained mahogany.

MERSHON & MORLEY COMPANY, Saginaw, Mich., manufacturers of portable schools. Plans and specifications covering Gold Bond Portable Schools manufactured by this company are included in a four page pamphlet.

MIESSNER PIANO COMPANY, 110 Reed St., Milwaukee, Wis. The Miessner Piano "The little piano with the big tone," is described in an interesting booklet of 24 pages. The illustrations show the various uses of the Miessner in schools.

THE J. B. MILLER KEYLESS LOCK COMPANY, Kent, Ohio. The keyless locks manufactured by this company are described and illustrated in a series of circulars.

THE MILLS COMPANY, 5320 St. Clair Ave., Cleveland, Ohio. The metal partitions manufactured by this company are shown in an eight page pamphlet. Construction details and specifications are issued. A separate folder describes metal partitions for toilets.

MILWAUKEE CORRUGATING COMPANY, Milwaukee, Wis. Manufacturers of Fire Safe Sheet Metal Products and Metal Laths. "The Milcor Architectural Sheet Metal Guide" is the title of a book issued by this company for the assistance of architects and school authorities. The Milcor Manual on metal lath construction describes Milcor expansion metal laths. Another booklet published by this company describes Milcor Art Metal Ceilings.

MONROE CALCULATING MACHINE CO., Orange, N. J. "Monroe Methods In Modern Accounting" describes the use of the Monroe adding calculator in detail.

THOS. MOULDING BRICK CO., 133 W. Washington St., Chicago, Ill., manufacturers of T-M-B Flooring. Detailed information and specifications covering T-M-B Flooring are issued in separate pamphlets. Typical school installations are illustrated.

MULTIPLEX DISPLAY FIXTURE COMPANY, St. Louis, Mo. The use and utility of Multiplex Educational Display Fixtures are shown in a six page pamphlet in color.

MUTSCHLER BROTHERS CO., Nappanee, Ind., manufacturers of office and domestic science tables. "Samson" office tables are illustrated and described in a 32 page booklet (11 x 8). Detailed information is also included on Porce-Namel Domestic Science and Cafeteria Tables.

THE NARRAGANSETT MACHINE COMPANY, Providence, R. I. "Gymnastic Apparatus". The catalog of gymnastic apparatus made by this company not only contains complete description and illustrations of the wide line they manufacture, but also includes suggestive illustrations of gymnasium and floor plans.

NATIONAL REGULATOR CO., 208 So. Jefferson St., Chicago, Ill. Manufacturers of Automatic Temperature Regulators. Catalog G, a 36-page booklet (6 x 9) describes the thermostatic devices manufactured by this company, showing the adaptability to temperature control in schools.

NATIONAL SCHOOL EQUIPMENT CO., Port Washington, Wis., manufacturers of School Furniture. The school desks and school furniture manufactured by this company are illustrated and described in a 32 page booklet (8½ x 11). The Moeser Arm Top as applied to the different styles of desks is shown. The Donovan desk for visual protection and improved writing manufactured by this company is illustrated.

NATURAL SLATE BLACKBOARD COMPANY, Pen Argyl, Pa. "Natural Slate for Blackboards" is the title of a 16-page pamphlet devoted to the origin, characteristics, preparation and finishing of blackboards, and to its setting and installation in school buildings.

THE HERMAN NELSON CORP., Moline, Ill., manufacturers of Univent system of heating and ventilating. Univent ventilating is described and illustrated in a 32 page book (8½x11). The chapter on the Evolution of Ventilation contained in this book is an interesting treatise on this subject.

N. O. NELSON MFG. CO., Edwardsville, Ill. Manufacturers of plumbing and heating supplies. In its new catalog N, the N. O. Nelson Manufacturing Company presents the widest range of sanitary appliances, steam and hot water heating and engineering supplies which this firm has manufactured and distributed during the past 40 years. The catalog is cloth bound and contains 800 pages (8 x 11).

NIAGARA CLOCK CORP., 2964 Main St., Buffalo, N. Y., manufacturers of non-winding wall clocks. The advantages of the Niagara Wall Clock are set forth in an interesting pamphlet.

NORTON COMPANY, Worcester, Mass., manufacturers of floor products. Norton Floor Products include: Alundum Floor and Stair Tile, Alundum Ceramic Mosaic Tile and Treads, Alundum Aggregates, Alundum Aggregate Tile and Treads. Adaptability and service in schools is described and illustrated in a 24 page booklet issued under the title, "Norton Floors."

THE NORTON DOOR CLOSER COMPANY, 2900 N. Western Ave., Chicago, Ill. Manufacturers of Norton Door Closer and its adaptability for use in schools is described and shown in a booklet published by this company.

NOVELTY SCENIC STUDIOS, 226 W. 47th St., New York, N. Y., manufacturers of Stage Curtains and Scenery. Booklet No. 55 published by this company will prove of considerable value to school officials in planning their stage settings. Various stage settings are illustrated in this 24 page booklet.

OAK FLOORING BUREAU, 1014 Ashland Blk., Chicago, Ill. A special pamphlet discusses the adaptability of oak floors to school buildings.

PAGE FENCE & WIRE PRODUCTS ASSOCIATION, 215 N. Michigan Ave., Chicago, Ill. Catalog No. 201 is a complete reference book on fencing. The solution to practically every fencing problem is illustrated with special reference to school grounds and playgrounds. Detailed drawings and specifications serve as an excellent guide for the school architect and school buyer.

THE PALMER COMPANY, Milwaukee, Wis. Manufacturers of Janitor, Sanitary and School Supplies. Palmer Multi-Service Products are described in a series of pamphlets published by this company.

THE PEABODY SCHOOL FURNITURE COMPANY, North Manchester, Ind., manufacturers of School Furniture. Catalog No. 23 not only presents the products of this company but outlines the facilities and service offered by this company in supplying the school furniture needs. This information is contained in a 36 page catalog (6 x 9).

PENNSYLVANIA STRUCTURAL SLATE CO., Worth Bldg., Easton, Pa., manufacturers of Natural Slate Blackboards. Natural Slate Blackboards are described in a 12-page booklet published by this company including detailed specifications and installations. Genuine Bangor Sanitary Plumbing Supplies are described in catalog H.

THE PERFECLITE COMPANY, 5518 Euclid Ave., Cleveland, Ohio, manufacturers of Lighting Fixtures. "Better Lighting makes Better Students" is the title of a 16 page (9 x 12) booklet published by this company to present the advantages of Perfecilte Fixtures for schoolhouse lighting. Perfeclites are specially designed for schools and the booklet is related entirely to school installations.

LEONARD PETERSON & COMPANY, 1234 Fullerton Ave., Chicago, Ill., manufacturers of laboratory, vocational and library furniture. The Laboratory and Vocational furniture manufactured by this company are described in catalog No. 14 containing 220 pages, 6½ x 10. Detailed drawings and complete information on their library furniture is contained in a separate catalog.

ALBERT PICK AND COMPANY, 208-224 West Randolph St., Chicago, Ill., equipment and supplies for cafeterias, lunch rooms, and domestic science departments. School Cafeteria Booklet Y93 outlines in detail the essential equipment necessary to take care of any number of children. Floor plans covering small and large units furnish a valuable aid to architects and school officials in laying out these rooms.

(Continued on Page 94)

Good paper improves the hand writing

Pencraft

Perfect Penmanship Paper

The New Standard

In announcing PENCRAFT for the school children of America a dependable basis is established for the specification and purchase of penmanship paper by the school authorities.

PENCRAFT is a fine sheet of writing paper made especially for school use. It has been produced to meet the demand for a properly surfaced sheet of good quality, moderate in price, and nationally distributed.

PENCRAFT has a uniformly hard smooth surface causing the pen to glide over it and making it easy to write upon. Its use is a material aid to quality and speed in handwriting.

PENCRAFT is watermarked in every sheet to identify the product and as a guarantee of quality, uniformity and protection against substitution.

PENCRAFT is ruled in various forms to meet all school requirements or furnished in blank sheets. It is put up in standard size packages for convenient handling.

PENCRAFT is distributed and sold nationally thru dealers. Purchase thru nearest distributor. Name furnished on request.

Standardizing on PENCRAFT is the secure way to quality, uniformity, service and low cost in penmanship paper.

Samples furnished on request.

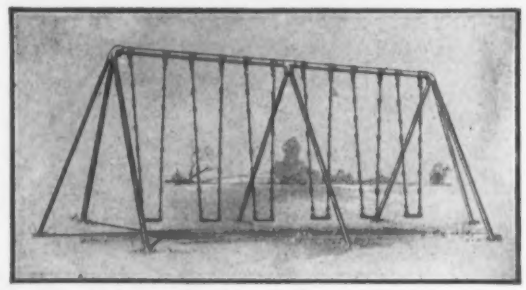
American Tablet Co.

GREEN BAY, WISCONSIN

PARADISE PLAYGROUNDS

INCLUDE:

Senior Swings
Junior Swings
Hammock Swings
Chair Swings
Junior Flying Rings
Senior Flying Rings
Junior Traveling Rings
Senior Traveling Rings
Teeter Boards
Teeter Ladders
Giant Strides
Ocean Waves



High Quality Safety, and Strength—at Low Cost

HIGH QUALITY because of greater buying power and facilities; STRENGTH because only finest materials, workmanship and design are used; SAFETY because every part is made right to withstand the greatest strains; LOW COST because of quantity production and careful buying. In every respect Paradise Playground Equipment is the preferred equipment.

Whether you want one swing or a complete Athletic ground installation, we welcome the opportunity of serving you with the best apparatus obtainable, regardless of price. Our Engineering Department is at your service to furnish plans for any size playground.

Write today for catalog, also copy of our booklet "Paradise Playgrounds—How to Plan Them."

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PARADISE PLAYGROUNDS

INCLUDE:

Portable Slides
Straight Slides
Wave Slides
Horizontal Ladders
Parallel Bars
Jumping Standards
Merry-Go-Rounds
Combination Outfits
Flexible Ladders
Climbing Poles
Lawn and Porch Swings

(Continued from Page 92)

POTTER MFG. CORP., 1862 Conway Bldg., Chicago, Ill., manufacturers of Tubular Fire Escapes. The various features of the Potter Tubular Fire Escape are illustrated in booklets and pamphlets issued by this company. These include: New Type of entrance doors directly from classroom with panic bolt equipment.

PROGRESSIVE SEATING COMPANY, Central Building, Rochester, N. Y., manufacturers of The New Empire Movable Chair Desk manufactured by this company is described in a 4-page pamphlet (8½ x 11). The Progressive Line of Tablet Arm Chairs are described and illustrated in an 8-page folder.

PURO SANITARY DRINKING FOUNTAIN CO., Haydenville, Mass., manufacturers of Drinking Fountains. The various types of Puro Drinking Fountains manufactured by this company are illustrated in a 12 page booklet.

RACINE IRON & WIRE WORKS, Racine, Wis., manufacturers of Gymnasium Baskets, Fire Extinguishers. A four page folder describes the products of this company.

THEO. B. ROBERTSON PRODUCTS CO., 700 W. Division St., Chicago, Ill., manufacturers of Soaps, Cleansers, Disinfectants, Brushes and Sanitary Supplies. Catalog H, a 56 page booklet, covers the complete line of cleaning supplies manufactured by this company.

RUBBERSTONE CORPORATION, 1400 Broadway, New York, N. Y., manufacturers of Tile Flooring. Rubberstone Floor Covering is described and the advantages set forth in a four page pamphlet by this company. Specifications for Rubberstone Floors are published in a separate pamphlet.

ALBERT RUSSELL & SONS COMPANY, Newburyport, Mass., manufacturers of Bronze Tablets. The work of this company in furnishing Bronze Tablets to the schools is shown in a series of cards reproducing various kinds of tablets installed in schools in different sections of the country.

THE RUV COMPANY, INC., 383 Madison Ave., New York, N. Y., manufacturers of R. U. V. water sterilizers. R. U. V. Ultra-Ray Sterilization is published in booklet E. 6 by this company.

SAFETY STAIR TREAD COMPANY, Wooster, Ohio, manufacturers of Wooster Stair Safe Grove Tread. "The Wear on Stairs" is the title of a pamphlet published by this company describing the Wooster Safety Stair Treads. Full size cross sections of the Wooster Safe-Grove Tread are illustrated.

SANI PRODUCTS COMPANY, Sani Building, North Chicago, Ill., manufacturers of Cafeteria and Lunchroom Equipment. The illustrated price list issued by this company contains valuable information in the purchase and selection of equipment for the cafeteria, lunchroom or domestic science department.

SANYMETAL PRODUCTS COMPANY, Cleveland, Ohio. Manufacturers of Sanymetal Partitions for toilet rooms. Catalog No. 5, a 24-page booklet (7½ x 11) describes and illustrates Sanymetal partitions. Detailed drawings show the construction and installation details.

SCIENTIFIC SEATING, INC., 98 Park Place, New York, N. Y., manufacturers of School Desks and Kindergarten Furniture. An 8 page folder describes the products of this company illustrating the manner in which correct posture is secured through the design of their Scientific Chair Desk.

E. H. SHELDON & CO., Muskegon, Mich., manufacturers of Laboratory, Home Economic and Vocational Furniture. Catalog No. 21, 104 page book (12 x 9⅛) describes in detail Sheldon products and Sheldon service for schools.

SHEWANA CABINET WORKS, Shipshewana, Ind., manufacturers of Shewana Display Cabinets. The utility and service of the Shewana Display Cabinet is shown in an illustrated four page pamphlet.

SPENCER LENS COMPANY, 442 Niagara St., Buffalo, N. Y., manufacturers of Microscopes, Microtomes, Delineascopes and their accessories, Scientific Optical Instruments. The catalog of Spencer products issued by this company is a reference book on Scientific Instruments including the products they manufacture. Detailed descriptions supplemented by illustrations give most complete information covering their products. Spencer Film Slide Projector and Spencer Film Slide Service are set forth in separate pamphlets.

THE SPENCER TURBINE COMPANY, Hartford, Conn., manufacturers of Vacuum Cleaning Apparatus. The Spencer Central Cleaning Systems and their use and adaptability in cleaning schools are shown in a 32-page booklet (8½ x 11). Various illustrations show the buildings, Spencer equipped.

SQUIRES INKWELL COMPANY, 713 Penn Ave., Pittsburgh, Pa. The different types and sizes of Squires Inkwells are described and illustrated in an eight page booklet published by this company.

STANDARD GAS EQUIPMENT CORP., 18-20 East 41st St., New York, N. Y., manufacturers of Gas Appliances. Vulcan Gas Appliances covering gas ranges to meet every need are included in catalog No. 48, a 72 page booklet (5 x 8¼).

STANDARD SCHOOL EQUIPMENT COMPANY, 4460 Louisville Ave., Louisville, Ky., manufacturers of school equipment. A standard line of desks, book cases, tables, cabinets are shown in a series of bulletins published in the form of a combination catalog (8x11).

STEDMAN PRODUCTS COMPANY, South Braintree, Mass., manufacturers of Reinforced Rubber Flooring. A detailed description of Stedman Naturized Flooring is contained in a catalog now being issued by this company. The uses, advantages and limitations are set forth in a non-technical style. The finishes and types of Stedman Naturized Flooring are reproduced in actual color. Complete specifications for Stedman Naturized Flooring are included and service offered by this company is outlined in detail.

STEEL FURNITURE COMPANY, Grand Rapids, Mich., manufacturers of Steel School Desks and Auditorium Seating. "Modern School Seating" is the title of a 28 page booklet (8½ x 11) illustrating and presenting the advantages of the products of this company.

THE STEFFENS-AMBERG COMPANY, 260 Morris Ave., Newark, N. J., manufacturers of Panic Exit Locks. Catalog No. 20 describes Smith's Improved Panic Exit Locks manufactured by this company. Specification data covering the various types of locks is included. (32 pages, 8½ x 11.)

STRUCTURAL SLATE COMPANY, Pen Argyl, Pa., publish a series of pamphlets offering specific data and standards for the selection and use of structural slate. "An Innovation" is the title of an interesting pamphlet describing structural slate in white and colors as now produced by this company.

THE HALSEY W. TAYLOR COMPANY, Warren, Ohio, manufacturers of Drinking Fountains. The Puritan Drinking Fountains manufactured by this company showing the various types made are described and illustrated in catalog B-2, a 36 page booklet. (3½ x 6½.)

TOGAN-STILES COMPANY, Grand Rapids, Mich., manufacturers of portable schools. Togan Factory-Made Schools are presented in a 16 page booklet 8½ x 11. Specifications and construction details and the floor plans make this book a complete reference guide to the products of this company.

TRIPLE METALS CORP., 107 N. Market St., Chicago, Ill., manufacturers of keyless locks. The Dudley Keyless Locks manufactured by this company, the advantages, uses and list of schools having installed this lock, is contained in a twelve page folder issued by this company.

TROPICAL PAINT AND OIL COMPANY, 1228 W. 70th St., Cleveland, Ohio, manufacturers of paints and varnishes. Products of this company are shown in a series of pamphlets and color charts. The June catalog contains complete information on all their products.

TRUSCON STEEL COMPANY, Youngstown, Ohio, manufacturers of Steel Window Sash and Steel Joists. A series of booklets issued by this company contain detailed information, descriptions and specifications of their products These booklets are as follows: "Truscon Projected and Counterbalanced Windows," 24 pages, 8½ x 11. "Truscon Steel Joists," 16 pages, 8½ x 11. "Truscon Standard," a 16 page pamphlet covering the different Truscon products.

UNDERWOOD TYPEWRITER COMPANY, 30 Vesey St., New York, N. Y. A 32 page booklet presents detailed information of the Underwood Typewriter.

UNION SCHOOL FURNISHING COMPANY, 1028 W. Van Buren St., Chicago, Ill., manufacturers of School Furniture and School Supplies. Catalog No. 21, a 96 page booklet (8 x 11) presents the school supplies and furniture sold by this company.

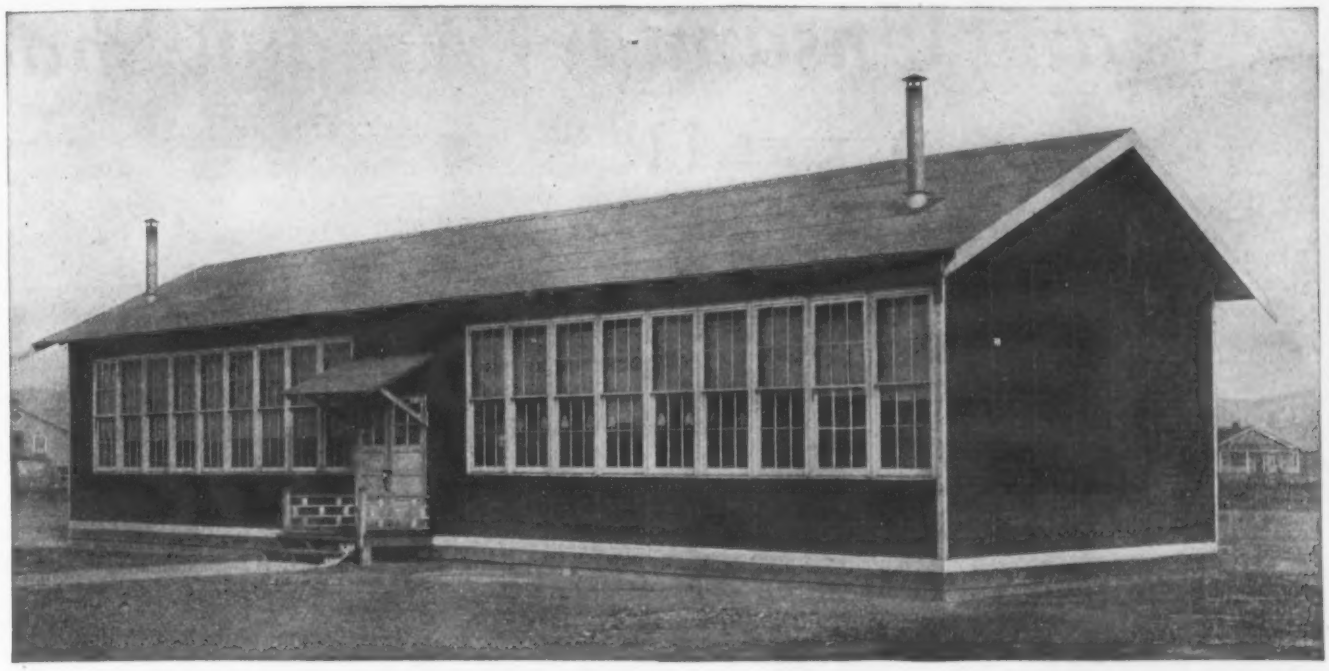
VALENTINE & COMPANY, 456 4th Ave., New York, N. Y., manufacturers of Varnishes. Valspar products are described in a series of booklets published by this company. "How to use Valspar" is the title of a 32 page booklet 3¾ x 8 containing practical instructions for the use of Valspar.

VICTOR TALKING MACHINE CO., Camden, N. J., manufacturers of victrolas and Victor records. The graded list and educational catalog of Victor records is a reference guide to the records for schools and colleges. 210 pages (5 x 7¼).

THE VITROLITE COMPANY, Chamber of Commerce Bldg., Chicago, Ill. Vitrolite, its advantages, adaptability and use in schools is set forth in an interesting manner in an eight page pamphlet published by this company. Vitrolite is an absolutely non-porous material in slab form in various sizes. It is adapted for wainscoting, toilet partitions, table tops.

WADSWORTH, HOWLAND & CO., 141 Federal St., Boston, Mass., manufacturers of Artists' Materials.

(Continued on Page 96)



Circle A Schools Meet State Requirements as to Plan, Light, Ventilation, Etc.

This Problem You Can Settle Now

Among the questions which you will be considering this summer is that of housing for the increased enrollment next fall.

Perhaps you are looking around for rooms in the neighborhood which you can rent. Perhaps you are wondering whether a basement can be made sufficiently habitable to take care of a class. Perhaps you are resigning yourself to sacrificing the curriculum to give additional pupils the absolutely necessary fundamentals of education.

You do not have to do any of these things.

Coxsackie, N. Y.,
April 25, 1925.

Circle A Products Corporation,
Newcastle, Indiana.

Gentlemen:

The buildings erected by you for the Board of Education of Coxsackie, New York, have been completed, and upon receipt of statement of the amount due you we are ready to send our check.

The gentleman you sent here to erect the buildings, impressed the individual members of our board very well indeed. I am but expressing the opinion of the board when I say that all his work was done in a very prompt and thorough manner, and we have a very kindly and friendly feeling toward him. Inasmuch as it was impossible for me to devote any time to the supervision of the erection during the last week that Mr. ---- was here and as I was unable to see him before he went away, I wish that you would express to him for me my sincere appreciation of his courteous attitude and prompt and courteous compliance with all our requests.

L. A. WARREN,
President. Board of Education.

You can order Circle A Portable Schools to meet your exact needs, get prompt delivery, and erect them in a week or two. And you will find that the pupils and teachers will strive for the privilege of enjoying the comfort, attractiveness and excellent lighting of Circle A Portable Schools.

Send for our Catalogue describing fully Circle A Schools, with illustrations, plans, method of construction and erection, etc. You will want to study it now as you make your plans for fall.

CIRCLE A PRODUCTS CORPORATION

600 South 25th St., Newcastle, Indiana — Formerly Champaign, Ill.

SECTIONAL

CIRCLE A SCHOOLS

Circle A Portable Bleachers — PORTABLE — *Circle A Portable Gymnasiums*

Why Pay a Premium for Unsightly and Unsanitary Window Shades?

This window shade installation is the simplest and most satisfactory method of controlling light and ventilation conditions in a schoolroom. Nothing to get out of order. No disfiguring adjusters. No needless expense

Owatonna High School, Owatonna, Minn., Shaded with Luxor Window Shades

UTILITY, sanitariness and beauty are the prime requisites of window shades for school room use—and these are decidedly lacking in so-called canvas or other coarse fabric materials. The loosely woven, unfinished fabric of such shades collects and holds dust and germs. Their appearance is not in keeping with the beautiful architecture of modern schools and after only a few months' use their unsightliness becomes more glaring.

Yet it is an actual fact that many school boards who have not investigated thoroughly the subject of window shades for schools have paid a handsome premium for such unsatisfactory shades, realizing their mistake too late.

LUXOR, the unfilled, closely woven shade cloth that has proven its value over and over again in the schools of this country, is sanitary, wear resisting and beautiful. It affords an efficient method of adjusting both light and ventilation to the best interest of the pupils' health.

Before making unwise expenditures of the taxpayers' money, every school board member should get the facts about this successful window shading. Our book, "**A Treatise on Window Shades for Schools,**" is an authoritative source of information on this subject. We will send you, on request, a copy of this book with samples of **Luxor** cloth and a copy of the specifications that are being used by the foremost school architects.

THE WESTERN SHADE CLOTH COMPANY

Founded 1871 · Incorporated 1897

Atlanta Buffalo CHICAGO St. Louis Detroit Indianapolis

THE FINEST WINDOW SHADES ARE MADE FROM LUXOR SHADE CLOTH

STANDARD SHADE ROLLERS

(Continued from Page 94)

Bay State Artists' Materials are described in a 32 page booklet (3½ x 6).

J. D. WALLACE & COMPANY, 134 S. California Ave., Chicago, Ill., manufacturers of Portable, Direct Motor Drive Woodworking Machines. Wallace machines for woodworking include: 16" Band Saw, Universal Circular Saw, Plain Circular Saw, 6" Jointer, 4" Planer, 6" Lathe, Disc Sander, Spindle Sander, Glue Pot. These portable, direct motor drive machines are described in a 24 page booklet illustrating their various uses.

A. T. WALRAVEN BOOK COVER COMPANY, Dallas, Tex., manufacturers of book covers. A six page folder describes Walraven Book Covers. Samples of the book cover are sent on request.

WATERMAN-WATERBURY CO., 1121 Jackson St., N. E., Minneapolis, Minn., manufacturers of School Heaters, Waterless Toilets and Bubbling Fountains. Waterbury products are presented in a 24 page booklet (7¾ x 10½).

WAYNE IRON WORKS, Wayne, Pa., manufacturers of Fences and Steel Sectional Grandstands. "Wayne Property Protection and Ornamentation" is the title of a 64 page booklet describing Wayne products. The utility and service of Wayne Sectional Steel Grandstands are presented in separate pamphlets showing actual installations.

WARREN WEBSTER & CO., 17th & Federal Streets, Camden, N. J. Heating Appliances—Air Conditioning Apparatus. Webster System of Steam Heating together with appliances manufactured by this company are completely described in the following catalogs: Webster Vacuum System of Steam Heating, 144 pages, 8x10. Webster Modulation System of Steam Heating, 88 pages, 8x10. The advantages of Webster Products and Webster Service in solving steam heating problems are presented.

WEBER-COSTELLO COMPANY, Chicago Heights, Ill., manufacturers of School Supplies. Weber-Costello time tested school supplies include Sterling Blackboard, Hyloplate, Erasers, Globes, and school maps, and are described in catalog No. 13 published by this company, (6x9), 72 pages. Separate pamphlets are published describing Sterling Life-Long Blackboard, a new manufacturers' blackboard made by this company.

HENRY WEIS MANUFACTURING CO., 1022 Commercial Street, Atchison, Kans. Manufacturers of Steel Compartments. Weis Steel Compartments, their construction and adaptability for various uses are presented in the catalog No. 11 issued by this company. Weis Steel Compartments for Grade Schools, Junior High Schools, and High Schools are featured.

THE WESTERN SHADE CLOTH COMPANY, Jefferson St., at 22nd, Chicago, Ill. Manufacturers of window shade material. "A Treatise on Window Shadings for Schools" is the title of a 16 page booklet issued by this company. Samples of Luxor Window Shades manufactured by this company are included in this booklet. This company also issues a 4 page pamphlet including specifications and showing typical installations.

WILDER-PIKE THERMOMETER COMPANY, Troy, N. Y., manufacturers of Thermometers. The different sizes and styles of Wilder-Pike Thermometers are shown in a 4 page folder issued by this company.

WILLIAMS PIVOT SASH COMPANY, East 37th St., at Perkins Ave., Cleveland, Ohio. Manufacturers of Reversible Window Fixtures. Williams Window Fixtures are described in a 6 page folder.

J. G. WILSON CORP., Eleven East 36th Street, New York City, N. Y., manufacturers of folding and rolling partitions and school wardrobes. In a 40 page booklet (8½x11), this company presents descriptions and illustrations of Wilson Sectionfold Partitions, Rolling Partitions and Hygienic School Wardrobes. The illustrations covering the school installations suggest the utility in services of Wilson Products in schools.

THE F. B. ZIEG MANUFACTURING CO., Fredericktown, Ohio. Playground Equipment. The different kinds of Paradise Playground Equipment covered by this company are shown in their 40 page catalog. "Paradise Playgrounds—How to Plan Them" is an interesting treatise on the subject of playground planning and equipment.

PERSONAL NEWS OF SUPERINTENDENTS

—J. E. Warren of Gloversville, Mass., has accepted the position of assistant superintendent of schools at Springfield, Mass. Mr. Warren is a graduate of Dartmouth College and has had a varied career as teacher and principal in a number of Massachusetts cities. In 1922 he succeeded J. A. Estee as superintendent of the Gloversville schools.

—Mr. J. L. McBrien, of the Terre Haute Teachers' College, Indiana, has been appointed head of the newly-created department of rural education and community activity of the Central Teachers' College, Oklahoma. Professor McBrien was at one time state superintendent of schools of Nebraska, and had also served as specialist in rural education and school extension in the United States Bureau of Education.

—Prof. Fletcher Harper Swift, of the College of Education, University of Minnesota, spent the past year as visiting professor in the department of educational administration in Teachers' College, Columbia University.

—N. H. Chaney, until four years ago superintendent of schools at Youngstown, Ohio, died suddenly on April 24th, at Cambridge Springs, Pa.

—Supt. E. M. Sipple of Burlington Ia., has resigned his position to become head of the Park Country Day School at Baltimore, Md. Supt. Sipple came to Burlington from Missouri in 1919, and had served that community six years.

—F. D. Shaw, a former Iowa educator, and for six years state superintendent of South Dakota, was recently elected a member of the South Dakota house of representatives.

—Z. C. Thornburg, former superintendent of schools of Des Moines, Ia., died May 3rd, at the Iowa Lutheran Hospital, following an operation for internal goiter. Mr. Thornburg was 52 years old at the time of his death.

Mr. Thornburg was born in Iowa and attended the schools of that state. He was a graduate of Highland Park College and of the law school of Drake University. In 1893 he became superintendent of the Oak Park school, and from there he went to the Capital Park school. He held the office of county superintendent for five years, resigning that position to return tb Highland Park where he served for two years. He left this position to become assistant superintendent of schools of Des Moines, and in 1913, when Mr. Riddle resigned, became superintendent of schools. He resigned from the superintendency in 1920 to accept a position at Des Moines College, and in July accepted the local postmastership.

—Miss Hester A. Roberts, principal of Public School 10, Manhattan, New York City, completed fifty years of service in the schools with the close of the school year. In celebration of her half century of service, the faculty with a few friends of the principal, tendered her a luncheon, followed by a theater party.

—Francis B. Haas, director of the administration bureau of the Pennsylvania Department of Public Instruction, has been appointed state superintendent, to succeed the late Dr. Becht.

—Mr. H. P. Shepard of Lincoln, Neb., has been elected superintendent of schools at Knoxville, Tenn., to succeed W. E. Miller.

—Mr. A. E. MacQuarrie, principal of the Jefferson Junior High School, Minneapolis, has been elected principal of the new Washburn Junior-Senior High School, Minneapolis.

—Mr. F. H. Lynn, who has been superintendent of the schools of Las Cruces, N. Mex., has been elected principal of the Union High School for the next year.

—Mr. William H. Allen, chief assistant to the survey committee of New York City, has been paid $16,000 instead of $12,000, to compensate him for overtime services in connection with the recent survey of the schools.

—The school board of Baltimore, Md., has intimated that it will select a new superintendent outside of Baltimore. It is believed there will be no limit set on the salary which will be offered to the right man.

—Supt. Harvey Gruver of Lynn, Mass., has been reelected for a third term.

—Mr. Harlan D. Crowell has been elected assistant superintendent of schools at Springfield, Mass.

—Supt. C. F. Dienst of Boise, Ida., has been reelected at a salary of $5,000.

—Mr. F. R. Angwin has announced his resignation as superintendent of schools at Neosho, Mo.

—Supt. Roy R. Evans of Greenfield, Mo., has resigned to take up work with a textbook publishing firm.

—Franklin P. Geiger of East Liverpool, Ohio, has been elected superintendent of schools at New Philadelphia. Mr. Geiger succeeds Charles S. McVay.

—H. D. Douglass, for the past four years at the head of the Lake Odessa, Mich., schools, has accepted the superintendency at Fowlerville.

THE FUN-FUL PLAYGROUND EQUIPMENT LINE

FUN-FUL Playground Equipment is the result of experience, a quarter of a century devoted exclusively to the development and manufacture of children's outdoor health building goods by this Company. The best you can buy, this we guarantee.

We offer the most comprehensive line to select from, nothing but approved and guaranteed apparatus.

Sold by the leading school supply houses thruout the United States, Canada and Mexico.

Largest manufacturers of Playground Equipment

Awarded Gold Medal Brazilian Centennial Exposition, 1923

HILL-STANDARD CO.

ANDERSON *Established 1900* INDIANA, U. S. A.

Above is the chemical laboratory of Mt. Holyoke College, where light is of utmost importance in class work. The new Science building is completely equipped with 503 Perfeclites, type used inset at left.

Above is photographic reproduction of a section of the pendant type Perfeclite, showing the patented Perfeclite mirror reflector in its relative position to the lamp filament, as contained in all Perfeclite units.

Why Perfeclite *is* the name of better lighting

Light that glares is wasteful and hurts the eyes; light that permits shadows damages vision. Bearing these facts in mind, Perfeclite was evolved. It allows neither glare nor gloom. Delicate colors can be matched under its flood of mellow light, yet always its light is kind to the eyes—truly the perfect light.

Perfeclite accomplished this result simply. Half the rays from a modern gas-filled incandescent lamp go up; half go down. Usually the upward rays are totally wasted by absorption against a discolored ceiling and the fitter of the lighting fixture. In Perfeclite, a battery of mirrors, set on a circular metal disc, catch and re-direct all upwards rays downward over the working plane. These mirrors are in exact focus with the lamp filament. All the light is used; both upward and downward rays are directed against the entire inner surface of the special glass globe, which literally filters the light.

THE PERFECLITE IDEA is a new booklet which tells all about Perfeclite, how we make it and how we sell it. It will be sent if you ask for it.

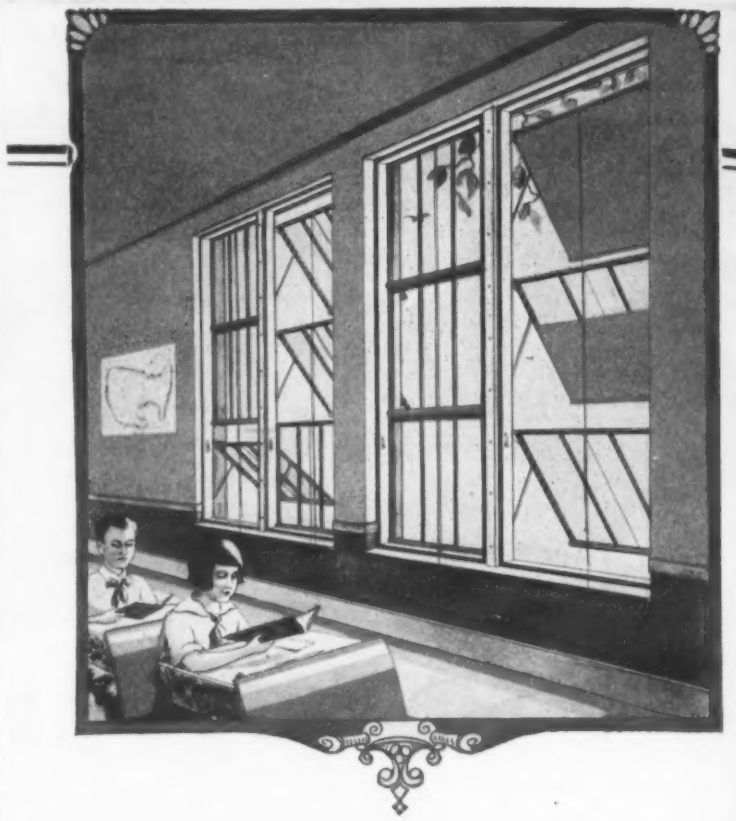
Complete!

A PERFECLITE Gym Unit contains the patented mirror reflector. This is particularly desirable when the lighting units are installed on high ceilings, which demands that the light be directed downward and evenly distributed over a broad playing area. The Perfeclite guard, made of extra heavy wire rods, has all joints electro welded, then soldered for additional security. Guard is held rigidly to four heavy iron cross members by four rugged bolts and wing nuts. No jars borne by guard can be transmitted to globe or lamp. Globe is held securely in fitter by locking nut on each thumb screw. Fitter supports only the globe.

PERFECLITE in the plain ceiling type is ordinarily used in installations where the plain pendant, shown above, is used. Produced in same sizes as the pendant type Perfeclite.

THE PERFECLITE COMPANY
5518 Euclid Ave., Cleveland, Ohio.

PERFECLITE
THE NAME OF BETTER LIGHTING



Windows that Save the Child's Eyes and Promote His Health

YOU avoid both the glare of sunlight and the darkness of drawn shades by using Truscon Donovan Awning Type Windows in schools. The light of outdoors is reflected to the ceilings and is evenly diffused throughout the room. You obtain not only perfect lighting but also ample ventilation under perfect control. Movement of the lower sash opens or closes the upper; or if preferred upper and lower sash operate independently.

Sturdy design, fine materials and superior workmanship assure the maximum in fire resistance, durability, quality and all round serviceability. The modern school should have the Truscon Donovan Awning Type Windows.

Write for Catalog and information.

TRUSCON STEEL COMPANY, Youngstown, Ohio.

Warehouses and Sales Offices in Principal Cities.
Foreign Div.: New York. Canada: Walkerville, Ont.

TRUSCON STEEL
DONOVAN
AWNING TYPE WINDOWS

For Your Summer Painting

TOCONAMEL

This is a wall and ceiling enamel, which will withstand hard wear and frequent cleaning. It produces a smooth, hard finish like tile, which is easy to keep clean and sanitary. Toconamel is especially desirable to use in bath rooms, kitchens, cafeterias, gymnasiums, hallways and play rooms. Toconamel is made in white and twelve attractive shades.

FLOORKOTE

For concrete and cement floors we recommend the use of Floorkote, which is made especially for this purpose. It penetrates deep into the floor and prevents dusting at the same time forming a tough, smooth finish on the surface. Floorkote resists abrasion from walking and running over it and can be washed frequently without injury. It is made in white and four suitable colors.

TOCOTONE

This is a paint for walls and ceilings which leaves a soft, velvety finish that is restful and pleasing to the eye. You will find it very desirable for schoolrooms and offices, because it diffuses the light rather than reflecting it direct, as in the case of gloss finishes. Tocotone is made in white and sixteen artistic shades, including creams, tans, grays, greens and blues.

We sell direct to public and private schools. Write for prices and complete information on anything you need in the line of Paints, Varnishes, Enamels and Roof Cements, as we make a very complete line of such products.

TROPICAL

The Tropical Paint & Oil Co.
1228-1270 W. 70th St.,
Cleveland, Ohio.
Warehouses in Principal Cities

SCHOOL BOARD NEWS

RATING RURAL SCHOOL BOARD MEMBERS

The kind of school board members in a rural community will not completely solve all rural school handicaps. Notwithstanding the outstanding needs, there is little doubt that rural people might do much for their schools if they recognized the value of expert advice in conducting the schools and if they more carefully selected school board members who would perform their duties more nearly in harmony with accepted business principles and according to the principles of school administration which have proved successful.

The money loss due to lack of the use of expert advice in conducting rural schools is no doubt very great. It probably mounts into millions of dollars. Much of this loss could be reduced if these schools would profit by the experience of successful business enterprises.

With these facts in mind, Mr. Edgar Mendenhall, of the Kansas Teachers' College, Pittsburg, Kan., has prepared a set of standards for rating rural school board members for the benefit of rural communities. By using these standards a community may estimate the degree of efficiency of each member of the school board. A school board member may also rate himself and increase his worth to his community if he so desires. The list of requirements for rating a school board member is as follows:

I. Personal Equipment

1. Has he at least a common-school education?
2. Does he own his home?
3. Is he a patron of the school?
4. Does he read a standard farm paper and at least one magazine or periodical of recognized worth?
5. Is he reasonably successful in conducting his own business?
6. Is he easy to get along with—not of fault-finding disposition.

II. Efficiency As a School Official

1. Does he regularly attend board meetings called by the county superintendent?
2. At school meetings does he take part in discussions and ask questions showing a desire for better schools?
3. At local school meetings does he show himself as being favorable to spending money for well-trained and efficient teachers and for good school equipment?
4. As a school official has he voted within the last year for some school improvement such as sanitary toilets, painting the buildings, improvements in lighting and heating, slate blackboards, single adjustable seats, library books and supplementary readers, improvement of the grounds, etc.?
5. Has he visited the school while in session at least three times during the past year?
6. Has he heartily co-operated with the teacher and tried to help her solve her difficulties?
7. Has he expressed himself as being favorable to retaining a successful and satisfactory teacher and willing to vote for a salary necessary to insure her retention?
8. In voting for teachers, does he seem primarily to be influenced by her professional fitness expressed to him by the county superintendent or by some other equally competent authority, rather than by kinship or local or political influence?
9. In voting for a teacher, does he seem to value maturity, character and extent of training, character and length of teaching experience?
10. Has he expressed himself as being favorable to the teacher living in and becoming a part of the community?
11. Does he make due effort in providing for her a suitable boarding and rooming place?
12. Has he expressed himself as believing that rural school boys and girls should have as good school buildings and equipment, as well-prepared and efficient teachers, as efficient supervision of instruction as have city boys and girls, and has he given support to any movement tending to bring about this equality?
14. Has he consulted the county superintendent before voting for school supplies and hiring teachers, and has he followed the superintendent's advice on these matters?
15. Has he expressed himself as willing to pay as high a salary for the teacher in his school district as is paid teachers in cities, provided the tax limit permits this?
16. Has he insisted that the teacher of his school be so far as possible as well prepared professionally as are the teachers of cities?
17. Has he shown himself to be posted upon schools of other places, and has he tried to make his school equal to or better than the average school?
18. Has he used his influence to get the teacher of his school to grow professionally by her attendance at teachers' meetings, doing professional reading, attendance at teachers' colleges?
19. Has he voted to allow the teacher of his school from $15 to $50 to spend at her discretion, for supplies or supplementary books?
20. Has he expressed himself as being more concerned for better schools than for the reduction of taxes?
21. Has he expressed himself as seeming to recognize that ignorance is more costly than education?

BOARDS OF EDUCATION

—New York, N. Y. Secretary Joseph Miller, Jr., of the board of education has rendered his annual report for the year 1924-1925, revealing a substantial improvement in the operation of the board's office building. The reconstruction of the building, and new office equipment and arrangements have placed the administrative procedure on a plane with that which exists in the business world.

In his report, Mr. Miller brought out that the office acknowledges all letters addressed to the board of education seeking information as to requirements for licenses, advice as to appointments, etc., and advises as to what bureau the letter has been referred. There are practically no complaints to unanswered letters. The minutes of the board are regularly and promptly prepared so that the board members and officials may be apprised of the action of the board immediately after it is taken. The introduction of a mimeographed calendar has greatly facilitated the work of the board because a full sum-

The

"Williams" Reversible Window Fixtures

This building is located near Cleveland, Ohio, and is but one of many buildings we have equipped for the same architects. The service rendered on this work has been a large factor in our receiving repeat specifications from this office.

When the windows in this building are operated the incoming outside air is deflected upward providing an ideal type of ventilation. The impetus now being given this type of ventilation further emphasizes a theory we have advocated since the Williams Reversible Window Equipment was first manufactured over twenty years ago.

This equipment is installed only by our mechanics, assuring our clients of efficient work and also placing the responsibility upon the manufacturer to make good his claims.

THE WILLIAMS PIVOT SASH CO.
East 37th St. at Perkins, Cleveland, Ohio

ROCKY RIVER HIGH SCHOOL, ROCKY RIVER, OHIO.
Nicklas & Rodrick, Architects, Cleveland, Ohio.

The Williams Plank Frame Reversible Window Equipment Provides:

Ideal overhead ventilation
Reversibility for inside cleaning
Greater light area
More weathertight construction
Better shading facilities
Simplified frame construction
Weightless windows

mary of each item is given and the members do not need to see the original resolution.

Mr. Miller asks that the board allow funds for the printing of the calendar of the committee of the whole and the board of education. This would eliminate the delays which certain bureau heads permit in submitting material for the calendar.

Much labor was saved the past year through an arrangement for collecting the necessary data for the city record supplement. One thousand copies of the education department section of the supplement were printed, so that all officials and principals have copies. Notices of teachers' appointments and transfers are being expedited through the use of carbon copies as notification sheets to those concerned.

The filing system of the office has been placed on a business basis. Important records of the board are to be centralized in one place, under the direction of the secretary. Old records are to be filed in a section of the basement.

Each commissioner now has a well-equipped office, and an attendance officer receives all visitors and arranges for their meetings with the persons they desire to see.

An inventory of supplies has been made and a new method of delivering contracts devised, which have saved the board hundreds of dollars.

A personal record is kept of the employees of the board in order to determine who should be promoted. A clerk will be employed to organize the records and bring them up to date.

In closing the report, Mr. Miller pays tribute to his co-workers for their assistance in putting the work of the board on a business-like basis.

—Chicago, Ill. Business Manager John Byrnes of the board of education has recommended the purchase of the Majestic Theater Building at 18-22 W. Monroe St., in the loop, as home for the board. The price is estimated at $2,500,000. The property is owned by the board but it is under a 99-year lease with 74 years to run. It is estimated the floor space of the 21-story building is sufficient to house the administration, educational and law departments of the board now located in three buildings, with a rental cost of $220,000 a year.

—Newark, N. J. The school board contemplates taking over the control of the finances of high school athletic events, from which revenue is derived. At present, high school sports are under the supervision of the high school athletic association which handles the financial end of all events, including football and baseball games.

—Omaha, Neb. The committee on teachers has offered to support the administrative staff in any program looking toward the elimination of high school clubs, societies and other organizations of a similar nature. A rule is proposed giving the superintendent and principals full authority to act in the matter.

—The appeal of O. P. Flower from the action of the board of education of Dubuque, Ia., in removing him from the superintendency will mean a hearing before the county superintendent, Joseph Flynn, which will be in the form of a court hearing. The procedure is provided for in the Iowa laws, which explain the manner in which such an appeal is made.

—The board of education of Muskegon, Mich., has placed an order for fourteen carloads of coal, at the price of $6.50 and $6.65 a ton, in bins at the school buildings. About two carloads will be delivered to the grade buildings and four carloads to the high school.

—Kenosha, Wis. Under the auspices of the local civic council, the city council has called a special election to vote on the reduction of the size of the school board, from eighteen as at present, to seven members. The state laws provide for a board of seven members, and it is only necessary to obtain a majority of votes of the citizens in a referendum to make a change from any other form.

—Davenport, Ia. For the first time in the city's history, a suit on a promissory note has been so decided that the school board is awarded the interest. The case was decided recently when the court granted judgment for $100 to Klindt & Raphael, real estate operators, against Walter Wolf, bill poster, and the interest of $8 was forfeited to the school board.

—The Montgomery County, Ia., district court has rendered a decision to the effect that children of the Iowa Lutheran Children's Home are entitled to attend the Stanton school, and that the home is not liable for any tuition except for those who are non-residents of the state.

The decision settles a controversy which originated five years ago when the Stanton school district demanded tuition from each child of the home attending school in Stanton. The home refused to pay the tuition and the children were denied admission to the school. The home appealed to the state superintendent. A hearing was held at Red Oak and the superintendent decided in favor of the home. The children returned to school and in September, 1924, the Stanton district presented the home with a bill of $224 for tuition fees. The home still refused to pay and the children were again refused admittance. Attorneys for the home brought an action in the district court, asking for a restraining order against the district, which was granted.

—A suit in which the consolidated school district of Glidden, Ia., seeks to remove the superintendent, R. A. Griffin, has been filed in the district court. Supt. Griffin was employed by the old board of education, and now the new board claims that his contract with the schools is illegal.

—The school board of Chicago has given its support to a bill in the state legislature, which would permit the board to obtain by referendum an increase of 75 cents in the tax rate for building purposes. The increase would bring the rate up to $1.75 and would increase the present funds available for building from $18,000,000 to $30,000,000.

—Springfield, O. Supt. F. E. Sheldon has submitted a plan to the board for taking a continuous school census. The census will be taken by the teachers in place of paid enumerators. Teachers will collect the data weekly for the census department and the permanent record will be revised with each change of address or new enrollment. A canvass will be made of the city for under age school children as a means of estimating the future school population.

—Washington, D. C. Appointment of a director of school attendance and work permits, as provided for in the new compulsory education law, has been made by the school board.

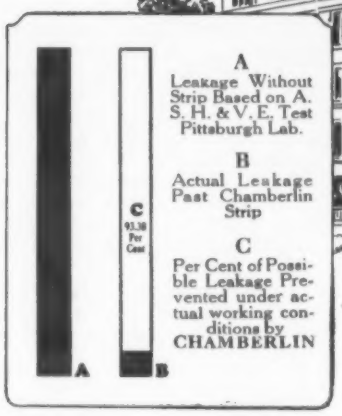
One of the first duties of the director will be the formulation of a system for taking the school census, as provided for in the law. A record will be kept of all children in the district between the ages of 3 and 18 years. The record of enumeration must contain the full name, address, race, sex, and date and place of birth.

The new department will have five census takers and a number of clerks. The census-

(Concluded on Page 102)

Why Chamberlin Protection Is Used by Nearly 5000 American Schools

Horace Mann School
New York City
Equipped in 1903 with Chamberlin Metal Weather Strips.


A
Leakage Without Strip Based on A. S. H. & V. E. Test Pittsburgh Lab.
B
Actual Leakage Past Chamberlin Strip
C
Per Cent of Possible Leakage Prevented under actual working conditions by CHAMBERLIN
C
93.38 Per Cent
A
B

How Chamberlin Tests are Made

Chamberlin installation tests are made by placing an air collection chamber over the entire inside of a window. Opposite doors and windows are opened to aggravate circulation. The in-leakage past the strip is measured with an anemometer. Windows are not specially prepared for test and are always on the windward side of a building. In-leakage always includes leakages through the frame and pulley holes.

Time Test Gives True Measure of Weather Strip Value

Tests made April 11, 1925, of Chamberlin Metal Weather Strips installed twenty-two years ago on the Horace Mann School, again reveal the lifetime efficiency of Chamberlin design and installation.

Actual leakage through windows with 20.67 lineal feet of crack, was only 1.87 cubic feet per minute. 93.38% of possible in-leakage of air was effectually prevented by the Chamberlin strip.

Chamberlin equipment, old and new, is functioning on the windows and doors of nearly 5,000 schools and colleges throughout the United States.

In added protection to the health of millions of pupils, in freedom from dust, draughts and germ-laden air, in lower fuel bills, the investment in Chamberlin weather protection has more than justified its cost.

Huge sums of money have been saved to tax-payers by the trouble-free maintenance of Chamberlin. In many cases, the use of heating plants of smaller capacity has been possible, due to the reduction of heat loss by Chamberlin weather strip.

Chamberlin has always regarded installation as a factor equally important as design. Because only Chamberlin experts perfectly trained to their work are allowed to fit and install Chamberlin Weather Strips, we are able to guarantee every installation for the life of the building.

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SINCE 1893-THE STANDARD

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The speed of DeVilbiss spray-painting averages 4 to 5 times faster than hand-brushing. The sprayed coating thoroughly and uniformly covers the surface to be coated, and has greater hiding power than the brushed coat. The same paint now used can be spray-applied, frequently using a less amount. There is no dripping nor spattering when spray-painting. The DeVilbiss spray gun is easy and non-tiring to operate and does your painting at the lowest practicable air pressure.

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(Concluded from Page 100)

taking force will be augmented during the summer by thirteen attendance officers, who will be employed on a twelve-month basis.

—Lincoln, Neb. The board of education has adopted a rule governing beet-field work among children of school age. The board stands for the enforcement of the law so far as it concerns children attending during the time they reside in the district.

—Des Moines, Ia. Another suit hinging on the responsibility of surety concerns for public funds covered by their depository bonds, has been begun by the board of education. Legal steps have been taken to resist claims of the surety companies to preference in the liquidation of the Commercial Savings Bank, which held school funds when it suspended business this year.

—Cape Girardeau, Mo. The school board recently became deadlocked over the question of permitting dancing at social functions of the schools. A vote on the matter resulted in a three to three tie, which could not be broken. Those opposing an official edict appear to have the upper hand for, until the board acts, the superintendent will act according to his own judgment.

—Kenosha, Wis. Approximately 400 employees of the schools, including members of the teaching staff, principals, janitors and clerks, will come under a plan of group insurance, which is to become effective January 1, 1926. The board was committed to the idea following a report of its special committee which studied the matter and reported favorably.

—Indianapolis, Ind. Mrs. Eugene Fifer, a member of the local parent-teacher association, recently made the charge that the school board is "ruled by politics and that teachers do not dare express themselves." A vigorous protest was made against the failure of Supt. E. U. Graff to recommend a certain teacher for a principalship.

—Williamson, W. Va. Two men were killed and three others wounded seriously in a gun fight which took place at Kermit, near here, where a school election was held. The dead are Sherman Parsley, a merchant, and Buck Kirk, president of the district school board. It is believed the shooting was preceded by a quarrel over the qualifications of those voting in the election.

—At Holland, Mo., six persons have been held under bond for their appearance in court in connection with a sensational flag episode. A telephone operator, three high school students, the superintendent of schools, and the president of the board of education are charged with showing disrespect to the American flag. The trouble arose when a flag, alleged to have been stolen from a school building, was presented to the school by a group of citizens. The school authorities were arrested on charges of disrespect, because they refused to allow the flag to hang in the schoolroom.

—J. M. TeWinkel, former superintendent of schools at Storden, Minn., has dropped his suit against the school board for $10,000 damages, in which he alleged the members had ejected him from the school building by force. The case was amicably settled with the decision to pay Mr. TeWinkel in full for his services, and also a small payment to cover his expenses in connection with his dismissal.

—The school board of Wapello, Ia., has intimated that it may prohibit athletics next year. Several students have been injured during the past year and as a result some of the members believe the program too strenuous.

—Oakland, Calif. The school board has eliminated the courtesy title of vice-principal in elementary and junior high schools. The change makes the instructor next in rank "teacher in charge" and involves no change in salaries.

—The school board of Pekin, Ill., has decided to take drastic action to eliminate vandalism and mutilation of school property. Flowers have been pulled up and stolen from several school grounds, and in some cases, property of value has been carried away.

The board has posted notices forbidding the use of the school grounds or buildings after 7:30 P. M. each day, except through proper permission to use them. The grounds will be under police protection after 7:30 each day and violations of the rules will result in arrest and prosecution.

—The court has sustained a demurrer in the case of David Haught against the school board of Ord, Neb., and the superintendent, because the latter had expelled Haught's son who had skipped school. Haught sued to have his son reinstated, claiming there were but two offenses warranting expulsion. The court suggested that the boy be permitted to attend school next fall the number of weeks missed, and then be graduated.

—The school board of Detroit, Mich., has promoted John F. Thomas and Edwin L. Miller to the position of assistant superintendents, each to receive a salary of $6,600. In addition to their former duties, these officials will undertake additional work of a broader nature.

—Bucyrus, O. Supt. J. L. Ward has asked that the board employ no married women teachers next year. The discussion produced very determined feeling on both sides of the question, and the matter was laid over for final action at a later date.

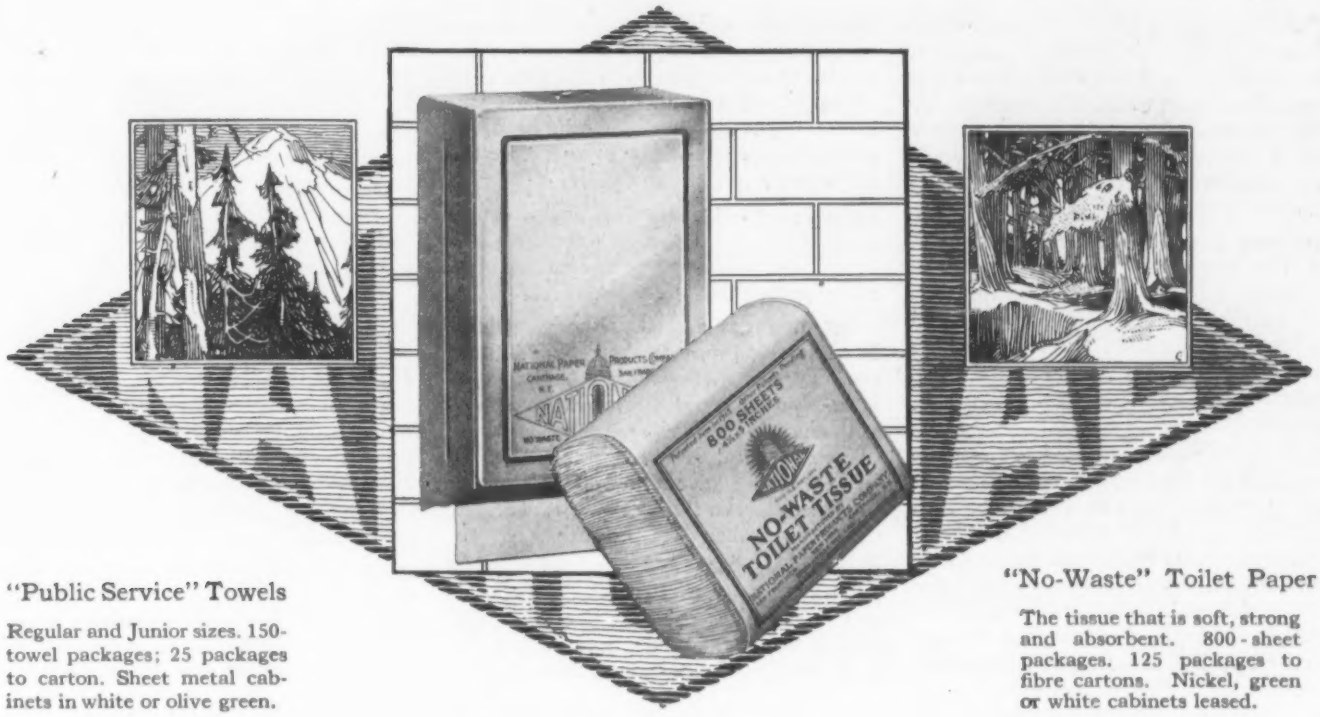
—John W. Willard of Masontown, Pa., has completed his 49th year as a teacher. Mr. Willard is 70 years of age and retired from teaching at the close of the school term.

—Chico, Calif. The board of education has made an open attack on the teacher tenure law of the state by ordering the dismissal of every teacher and principal in the school system. The action was taken to insure the employment of teachers of the board's own selection, and to prevent teachers not of its selection from retaining positions through the teacher tenure law. The decision affects 65 elementary teachers, 45 high school teachers, and two principals.

—Irvington, Ia. A recent ruling of the school board of Irvington Township, Kossuth County, providing that no married teacher may be employed, has been revoked. Three married teachers, two women and one man, have been employed.

—Cedar Rapids, Ia. The school board has placed teachers on an efficiency basis, to be rated on their ability rather than on their education. The salary limit has been raised to $155, beginning with the next school year. A number of teachers have been given increases of $10 on the basis of the work performed in the classroom.

—Monmouth, Ill. The school board has passed an order requiring that every member of a high school fraternity must sign a pledge renouncing their affiliation with the society, or suffer the penalty of expulsion. The action came as a result of the "stacking" of lockers in which three high school boys were discovered to have taken part.



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A TWO-FOLD trust—**first,** to protect the health of washroom users; and **second,** to spend money **wisely** for washroom maintenance. You will fulfill it completely by standardizing on "National" Paper Products.

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Same quality as "No-Waste", 1000 counted sheets in a sanitary wrapped package for the home.

Four danger spots in your school

FOUR parts of a school building require more than their share of attention. These four are the floors, roof, painted surfaces and exterior walls. On these trouble spots you can cut your present maintenance costs to a surprisingly low level. Hundreds of schools all over the country have done so by following the suggestions below.

Concrete floors—Under friction and wear tiny particles of a cement floor break off and float into the air as silicate dust. This dust is hard on lungs, clothes and equipment. Even more troublesome than the dust are the holes, hollows and worn patches that follow in its wake. Before long you have floor repairs to make.

Yet it is a simple matter to have concrete floors that are hard—that will not dust or wear. Just treat your concrete floor with Lapidolith, the liquid chemical hardener. Lapidolith can be flushed on either a new or old floor like water. It penetrates the concrete, fills and binds the loose pores together, hydrates the free lime, and changes the coarse-grained structure to a fine, even, dense wearing surface of crystalline formation. This surface remains dustproof, wearproof, and waterproof for years.

Wood floors—You can keep your wood floors in good condition by an application of Lignophol, a preservative floor dressing that penetrates the wood, restoring its natural oil and gums. It is worth many applications of ordinary floor oil. A floor treated with Lignophol is not sticky nor inflammable. It is dustless, smooth, hard and sanitary; easy to wash or to sweep. And it stays that way for many years.

Leaky roofs—One tiny leak in the roof can cause a lot of damage. An application of Stormtight will stop any one leak or make an entire roof absolutely waterproof.

Stormtight is a thick, adhesive rubber-like compound that can be applied by anyone, over any roofing material. If the leak is small, semi-liquid Stormtight is applied with a brush. If it is large, the plastic form of the material is used, applied with a trowel. If you have an old roof about due for renewal, save the cost of re-roofing and cover the surface with Stormtight.

Painted surfaces—For school interiors you want a paint that is durable, washable and stays white. Cemcoat is a gloss, egg-shell or flat enamel paint that stays white long after all other paints turn yellow. Finger prints, ink stains and pencil marks can be washed off its surface as from tile, and after repeated washings the paint still looks like new.

Cemcoat is not affected by the free lime in plaster or cement. It adheres to those surfaces or to a brick wall just as easily as to wood. And because of its body, Cemcoat usually requires one less coat than other paints. If you want bright, cheery, long-lasting interiors at a low cost, try this paint. Made in white and colors, for exteriors as well as interiors.

Exterior walls—If you have trouble maintaining the natural beauty of your exterior walls; if water seeps through in a driving rainstorm, you will welcome Hydrocide Colorless, the ideal waterproofer.

Hydrocide Colorless penetrates the surface of the brick; it contains no paraffine; does not run in hot weather; does not collect dust; and it can be painted. Best of all, the presence of Hydrocide Colorless on a wall can not be detected. If you would have warm dry interiors use this material.

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SCHOOL BUILDING NEWS

—The board of education of North Tonawanda, N. Y., has undertaken an extensive building program, including a high school, two grade schools and an addition to an existing school. Of these buildings, two have been completed at a total cost of $150,000; one has been begun, and the cornerstone laid for the high school. The latter will have accommodations for 800 pupils and will cost $550,000.

—Mr. Edgar Martin, supervisory architect of the Chicago board of education, speaking recently before the Illinois Society of Architects, gave figures showing the magnitude of the schoolhousing program facing the Chicago school authorities.

Mr. Martin stated that there is a deficit of 87,000 seats in the public school system, and that the number of children of school age is increasing at the rate of 17,500 each year; that on January 1, 1925, there were buildings under construction of sufficient seating capacity to take care of 10,000 children; that the program for the year 1925 contemplates a further increase of 39,275 seats, making a total of new sittings to be completed or contracted for prior to January 1, 1927, 49,275. This will leave a deficit in 1927 of approximately 60,000 seats.

Mr. Martin quoted figures as to the cost per cubic foot of buildings now under contract, which gave some astonishing results. It was shown that the cost of fireproof schools now being constructed is much less per cubic foot than what most architects are led to assume.

Commenting on the progress of the present school building work, Mr. Martin stated that since January 1, 1925, contracts have been let for ten elementary schools, two additions to elementary schools, and one high school building, with a seating capacity for 10,975 children, at a total cost of $6,900,000; that plans and specifications have been completed for seven additional elementary schools having a total capacity of 7,000, at an estimated cost of $3,500,000; also, that the board expects to complete by December 31st, plans for one combined junior-senior high school, four additional elementary schools, five junior high schools and two senior high schools, having a seating capacity of 20,500 at an estimated cost of $11,500,000. It is expected that the buildings awarded this year, and those planned, will provide for a total seating capacity of 39,275 seats, at an estimated cost of $21,800,000.

The operation of the standardization plan has made it possible to handle the work at a very material saving of drafting-room expense over previous records. The cost per cubic foot of the schools now being designed is approximately 36 cents per cubic foot, and the cost per pupil varies from $320 to $540 per seat, while the cost of additions to existing schools is only $150 per pupil.

—Seven times during the past two years a school site proposition has been voted down at special elections at Canastota, N. Y. In March, 1924, a proposition appropriating $165,000 for a high school building was carried by a narrow margin. At the last election, held on May 9th, the site proposition was again lost by 67 votes.

—The junior-senior high school at Solvay, N. Y., was completed on July first, at a cost of $525,000. The plans for the building were prepared by Architect M. L. King, of Syracuse, N. Y., under the direct supervision of Supt. Arthur M. Croop. The building contains a cafeteria, shops, a gymnasium and an auditorium seating 900 persons.

—Milwaukee, Wis. The building committee of the school directors has presented a special report, in which it recommends the adoption of a standard plan for elementary schools. It is recommended that the assistant architect prepare a standard plan of building, the plan to be so designed that the building shall be capable of erection in units. It is asked that the board adopt the policy of erecting elementary schools according to a standard plan, based upon unit construction.

—The board of education of Lima, O., has asked the Bureau of Educational Research to make a building survey in order to determine a school building program for the next ten years. Additional classrooms and buildings are needed to meet a large growth in school population. The survey will be under the direction of Mr. P. R. Stevenson.

—Jersey City, N. J., has adopted a school construction program, to be carried out at an estimated cost of about five million dollars. The plan provides for an elementary school to replace two old schools and three junior high schools.

—East Hartford, Conn., has let the contract for a twelve-room elementary school, at a cost of $135,000. An annex, consisting of four rooms, a principal's office, restroom, and school nurse's room, has been completed for one of the grade schools at a cost of $50,000.

—Hempstead, N. Y. By an overwhelming majority, the taxpayers have authorized the issuance of bonds for $300,000 for the acquisition of sites and the construction of two elementary schools.

—At a special meeting, the citizens of Brewster, N. Y., approved a bond isssue of $250,000 for the rebuilding of a school destroyed by fire.

—The new high school at Fort Edward, N. Y., was dedicated at commencement time in June. The building is located on a site of six acres and was erected at a cost of $240,000.

—A new school building costing $200,000 will be built in Spencerport as a result of a favorable vote of the taxpayers.

—Winsted, Conn., has voted $270,000 for two grade school buildings.

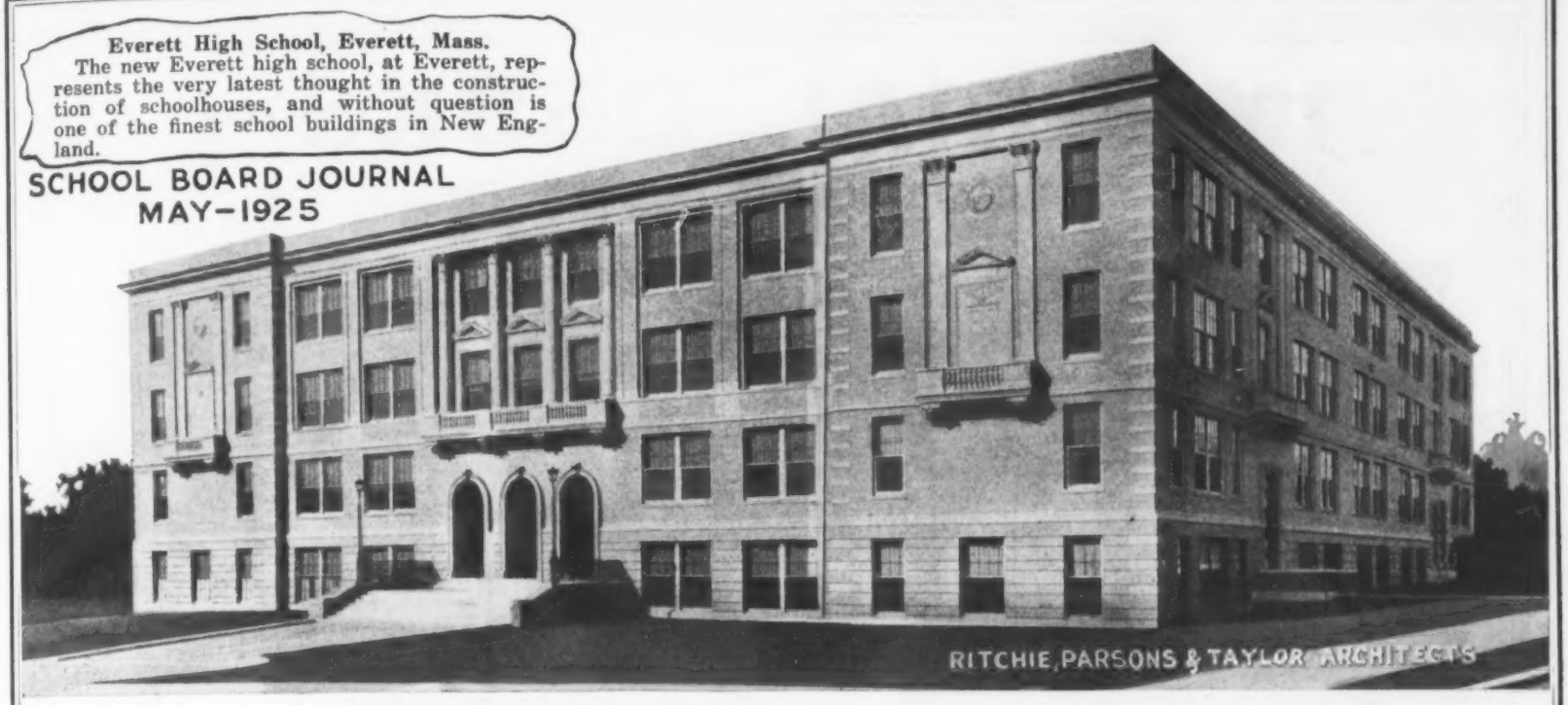
—Hempstead, N. Y. The citizens have voted a bond issue to erect two primary schools. Ernest Sibley is the architect.

—An addition of twenty rooms is being built to the high school at Mechanicsburg, N. Y.

—Miami, Fla. The school board is carrying out an extensive building program, comprising the erection of fourteen schools. In addition, plans have been made for additions to ten grammar schools.

—Hornell, N. Y. The board of education has begun work on the restoration of the Irving grammar school, which was damaged by fire in March last. A new heating plant will be installed and four classrooms added to the building.

(Continued on Page 107)


Everett High School, Everett, Mass.
The new Everett high school, at Everett, represents the very latest thought in the construction of schoolhouses, and without question is one of the finest school buildings in New England.
SCHOOL BOARD JOURNAL
MAY-1925
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Therefore, you would expect the Everett High School to be Duriron equipped.
IT IS!

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(Continued from Page 104)

—New Lexington, O. The contract has been awarded for the erection of a high school to cost about $200,000. John Q. Adams, of Columbus, O., is the architect.

—Ferry, N. Y. A $250,000 annex has been occupied, providing for the housing under one roof of an entire school plant from kindergarten through the high school.

—Las Cruces, N. Mex. A new high school is nearing completion. With the opening of the schools in September, the grade and high schools will be in separate buildings as well as under separate supervision.

—CleElum, Wash. The citizens have recently voted in favor of building a new schoolhouse. The building will complete a unit structure begun two years ago, which will give Cle Elum a modern school plant at a cost of $110,000.

—The citizens of Taylor, Pa., at an election in June, voted on a bond issue for a new high school.

—Taylor, Pa. On June 2nd, the voters approved a bond issue of $300,000 for a new high school. In order to advertise the bond issue proposition and to bring it before the school patrons, a special pamphlet was issued showing the need of a new high school, and giving some facts about the loan and about the school tax millage. It was pointed out that the school district ranks low in providing adequate school facilities and there was a demand for adequate housing without the present handicaps.

—Build schools and shorten the time of instruction, has become the slogan of the new president of the Chicago board of education, Mr. Edward B. Ellicott. The schools have become so crowded that many of them have been forced to lengthen the normal school day from five to six hours, many others have been forced to resort to double days of two shifts each, and still others have had to adopt rotary systems or other expedients approaching the platoon type of organization.

Mr. Ellicott believes that the custom of carrying an investment of several hundred thousand dollars for site and construction work of a school over a period of a year without returns is costing the board heavily. A move will be made in the near future to force contractors to devote closer attention to construction work in order that the time of such investments may be materially reduced. In other words, time will be one of the elements that will be taken into consideration in the comparison of bids for the awarding of contracts.

—Detroit, Mich. The school board has selected four firms of architects to supervise the greater part of its building program for 1925-1926, involving the erection of seventeen school units within a total appropriation of $5,002,776.

Buildings to be erected include eight elementary schools, four additions to elementary schools, and intermediate schools, and three additions to high schools.

—Neenah, Wis. The city council has adopted a recommendation calling for a bond issue of $500,000 for the erection of a high school building. A tax will be levied to take care of the bond issue.

—Sioux City, Ia. With the prospect of having about $92,000 left in the school funds this year, the school board has proceeded with the work of completing the Woodrow Wilson school. The estimated balance in the school fund includes about $23,000 of taxes voted for schoolhouse construction.

—Boston, Mass. Appropriations amounting to $2,909,579 have been made by the Boston school committee to meet administration expenses for additional cost of accommodations authorized and for additional accommodations.

The additional accommodations include $390,000 for a nine-room addition to the South Boston high school; $184,000 for an eight-room building in the Everett district; $207,000 for an eight-room classroom unit in the Shurtleff district, South Boston; $100,000 toward a 36-classroom high school in Hyde Park; $29,000 for a twelve-classroom annex to the Lewis intermediate school, Roxbury; $242,000 for an eight-classroom unit of a 24-classroom intermediate school in the Minot district, and $142,000 for an addition to the Boston trade school.

—The state legislature of Illinois has appropriated $275,000 for restoration work among the schools of southern Illinois which were damaged by the recent tornado. It is believed that this amount, together with the insurance collected by the stricken school districts, will be ample to restore all the schools in the area to serviceable condition.

—Evansville, Ind. In order to equalize the educational opportunities of the school children of the city, the school board has taken steps toward the adoption of a five-year building program. The program will involve an expenditure of a million and a half dollars and will require an approximate five-cent increase in the tax levy.

The plan which has been worked out in detail, represents more than six months of intensive study, and is based on lengthy reports made by principals and a survey of each school building and its grounds. Among the more important projects are the concentration of colored schools in one unit, wholesale additions to playgrounds and several school additions.

The largest undertaking for the fourth year, and the most important in the program, will be the erection of a combined high and elementary school, with a gymnasium and auditorium. The fifth year will see an auditorium-gymnasium erected at two schools, the laying out of an additional playground, and the installation of new heating plants.

—The school board of Mexico, Mo., has adopted a recommendation providing for a bond issue of $300,000 for the erection of a high school. The action followed the adoption of a survey report Presented by Dean M. G. Neale of the University of Missouri.

—The new high school now in process of erection at Kenosha, Wis., is ready for the installation of equipment. It is estimated that the building will be completed at an expense of not to exceed six-tenths of one per cent of the original contract estimates. The total value of all contracts awarded thus far for work already completed, or in process of completion, is $1,029,996.

—Marshalltown. Ia. The school board has called a special election to vote on the issuance of $400,000 in bonds for a new high school.

—The school board of Decatur, Ill., has selected names for three schools, all of them being selected from the list of deceased presidents. The three names are George Washington, James Garfield, and U. S. Grant.

—Cliffside Park, N. J. A landslide in favor of more school buildings was effected when six resolutions, embodying the erection of a twelve-room school, and a twenty-room addition to the high school were carried with a majority vote.

IMPERIAL DESKS—

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The increased facilities require a total appropriation of $541,000.

—Far Rockaway, N. Y. Approximately $1,682,377 have been spent by the city for new schools and additional facilities since 1918, according to a report of the school board. The report shows that more than 200 schools are included in the construction work which has been carried out under the present city administration. Of the 200 schools, a total of 143 have been completed, providing for a seating capacity of 167,629, while 61 other buildings are being erected. Of the total number erected since 1918, forty are in the Borough of Queens. The most expensive school project undertaken by the board was the erection of the school at Arverne, with a seating capacity of 1,943 and a building cost of $957,882.

THE EAST HARTFORD GRADING PLAN

A school grading plan, devised by Mr. Bernard Ross, principal of the high school, has been adopted for use in the schools of East Hartford, Conn. The plan is intended to define more completely the various grades, and to make the work of grading a more scientific and accurate procedure. The following standards are being used as a basis for estimating a pupil's progress in education:

1. Preparation. 2. Application. 3. Knowledge of subject. 4. Use of English. 5. Progress.

1. **Preparation** refers to the pupil's skill and ability in qualifying for a particular end, or purpose.

2. **Application** refers to the qualities of attention and initiative that mark the pupil's ability to contribute to the recitation or group product. These qualities are manifested through the depth of concentration, the originality, and the ingenuity applied in the pursuit of the subject.

3. **Knowledge of subject** refers to the pupil's information concerning the subject, his comprehension of it, and his skill in its use.

4. **Use of English** refers to the formation of speech habits which are grammatically, idiomatically and rhetorically correct, and to the acquisition of a comprehensive and usable vocabulary for reading, writing and speaking.

5. **Progress** refers to the pupil's attainment, his development, and his proficiency in accomplishing the goals set, and in realizing the objectives to be attained.

In outlining a definition of grades, attention is given to a number of subsidiary items which enter into the rating. These are as follows:

Definition of Grades

Grade of A
- I. PREPARATION—
  - Methodical, constant, exceeding expectations in supplementing assignments.
- II. APPLICATION—
  - 1. Attention—
    - Constant and unusual in depth of concentration.
  - 2. Initiative—
    - a. Designated by a high degree of originality and ingenuity in pursuit of subject.
    - b. Expressed in ability both to stimulate and to contribute to the group accomplishment.
- III. KNOWLEDGE OF SUBJECT—
  - Superior in grasp, full and comprehensive, exceeding expectations.
- IV. USE OF ENGLISH—
  - 1. Extensive in vocabulary, excellent in diction, correct in speech habits.
  - 2. Rapid in comprehension and interpretation as a reader.
- V. PROGRESS—
  - So rapid as to constitute the student an outstanding member of the group.

Grade of B
- I. PREPARATION—
  - Same as for grade of "A," but somewhat less energetic and original in supplementing assignments, and in making independent investigations.
- II. APPLICATION—
  - 1. Attention—
    - Same as for grade of "A," but slightly less marked.
  - 2. Initiative—
    - Same as for grade of "A," but slightly less marked.
- III. KNOWLEDGE OF SUBJECT—
  - Superior in achievement, but less complete in mastery than for grade of "A."
- IV. USE OF ENGLISH—
  - Same as for grade of "A," but somewhat less marked.
- V. PROGRESS—
  - Rapid but not so rapid as to constitute the student such an outstanding member of the group as required for grade of "A."

Grade of C
- I. PREPARATION—
  - Adequate to meet the demands and suggestions of the teacher, moderate in the amount of supplementary work on own initiative.
- II. APPLICATION—
  - 1. Attention—
    - Fairly satisfactory but not significant.
  - 2. Initiative—
    - Not noteworthy but appreciable when stimulated by reasonable encouragement and aid.
- III. KNOWLEDGE OF SUBJECT—
  - Adequate but moderate in extent; sufficient to meet the teacher's requirements.
- IV. USE OF ENGLISH—
  - Fair in vocabulary, in speech habits, and in diction; indicating the ability to read with a reasonable degree of comprehension.
- V. PROGRESS—
  - Steady but quite noticeable.

Grade of D
- I. PREPARATION—
  - 1. Barely sufficient to cover minimum assignments.
  - 2. Manifested by little or no supplementary work.
- II. APPLICATION—
  - 1. Attention—
    - Somewhat wavering, at times uncertain, yet fairly moderate and satisfactory.
  - 2. Initiative—
    - Slight or poorly directed, demanding much help and encouragement on new work.
- III. KNOWLEDGE OF SUBJECT—
  - Mastery of a bare minimum for passing.
- IV. USE OF ENGLISH—
  - Barely adequate in vocabulary, in speech habits, and in diction; inefficient in power to read comprehensively.
- V. PROGRESS—
  - Slow, plodding, barely sufficient to accomplish tasks and goals as set.

Grade of F
- I. PREPARATION—
  - Careless, partial, inefficient, exhibiting indifference.
- II. APPLICATION—
  - 1. Attention—
    - Wavering, intermittent, not dependable, and generally unsatisfactory.
  - 2. Initiative—
    - a. Little, none, or misdirected.
    - b. Characterized by inability or unwillingness to follow directions.
- III. KNOWLEDGE OF SUBJECT—
  - Very meager, fragmentary, and inadequate.
- IV. USE OF ENGLISH—
  - Very deficient in vocabulary, slovenly in speech habits and careless in diction; inferior in ability to read understandingly.
- V. PROGRESS—
  - Inappreciable.

—The Deuel constitutional amendment seeking to abolish the elective position of state superintendent of California schools, has been killed in the legislature. Mark Keppel, superintendent of schools at Los Angeles, delivered a broadside at the amendment, in which he took issue with Deuel as to the value of the proposed measure. He declared it would take away from the people the control of the schools and place it in the hands of a partisan director, controlled by a partisan board and subject to a partisan governor.

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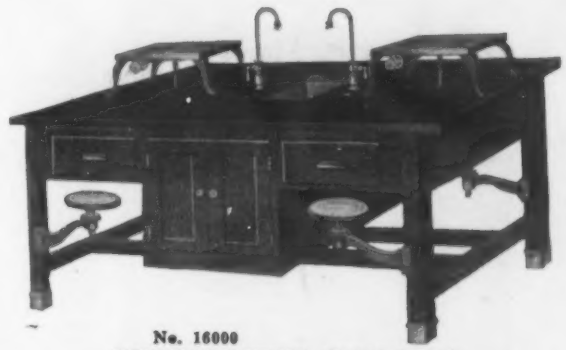

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SCHOOL FINANCE AND BUILDING

PORTLAND CALLS ELECTION TO VOTE EXTRA TAX LEVY

—The school board of Portland, Ore., called an election in June, at which time the citizens were asked to approve an extra levy of $900,000 in order that funds might be provided for the operation of the schools during the next year. The levy is intended to take care of a total budget of $4,271,208, which is based upon an attendance of 50,000 children.

The budget includes a total of $3,206,284 for instruction; $55,403 for supplies; $4,522 for textbooks; $381,539 for operating costs; $315,000 for maintenance of property; $30,000 for outlay of buildings and $60,000 for grounds; $38,500 for outlays for equipment; $43,000 for auxiliary agencies and sundry activities; $34,800 for the department of education; $40,775 for the department of business; $47,000 for the department of properties; $33,550 for general expense, and $7,710 for the administration building.

The question of an additional levy of $300,000 for salary adjustments of the teaching force has been proposed by the board.

FINANCE AND TAXATION

—The taxpayers of Oklahoma City, Okla., recently approved a fourteen mill school levy. The vote was nearly nine to one in favor of the budget, which totals $1,857,998, of which the tax will raise $1,766,360. A feature of the budget is the resumption of the teachers' promotion or salary increase schedule, which was suspended a year ago.

—Portland, Ore. The board of directors, after full discussion of the question of salaries, to be paid to the teaching staff during the year 1926, adopted a resolution asking that an increase in the amount of the tax levy be levied for 1926, in the amount of $345,000. The increase in the levy is needed to pay increases in the salaries of teachers and principals during the next calendar year.

—Chicago, Ill. Following an audit of the books of the board of education for the year ended Dec. 31, 1923, Supt. William McAndrew has drawn the conclusion that there is now a surplus of $17,000,000 instead of a deficit of that amount in the educational fund. The so-called deficit, declares Mr. McAndrew, is a matter of bookeeping. From the fiscal statement of the auditor of the board, there was reported a deficit in the educational fund in 1924 of approximately $15,000,000. In explanation of the differences in the reports, it is pointed out that the real financial condition of the school district is not correctely reflected by the financial statement of the board's auditor, since his records are on the basis of moneys actually received and expended, rather than on assets accrued. These assets are tax-anticipation warrants, never yet utilized by the board of education. The deficit appears on the books as a result of keeping the accounts on a cash rather than on an accrued basis.

—Houston, Tex. The school board has adopted a budget of $2,701,000 for the maintenance of the schools during the next year. In addition, the board will spend $2,500,000 for the remainder of the bond issue, bringing the total to $5,500,000. The per capita cost for the next year will be $52.50, as against $51.04 in 1924.

—Toledo, O. A proposal for a one-mill increase in the school tax levy has been submitted to the voters. The tax levy of 1920 has expired and the new levy is intended to inaugurate a pay-as-you-go building program for the schools. Under the three-mill levy, Toledo could pay for its schools as they are built, effecting a substantial saving. Under the present system of issuing 25-year school building bonds, the schools pay $1.60 for each dollar which goes into building.

—Hagerstown, Md. The school board may not apply the $50,000 in premium and interest on the bond issue to building the new Hagerstown high school, according to Supt. B. J. Grimes. The decision was in reply to a suggestion that this money be used to complete the high school building, funds for which are about $20,000 less than the lowest bid submitted. The lowest bid was $300,000, while only $280,000 is available for the new school.

—Rock Falls, Ill. In November last, the voters voted to bond the school district five per cent of the assessed value. The educational tax has been raised from two to three per cent, and the building tax from ¾ per cent to one per cent. The increases made it possible to keep the schools on the same high level. A new eight-room school has been erected, which will be occupied in September.

—Burley, Ida. An additional two-mill levy has been voted for the schools next year.

—Falls City, Neb. The state auditor and examiner have declined to register a bond issue of $250,000 because of the omission of an optional payment clause which had been included in the original proposition submitted and voted upon.

—Kansas City, Mo. The school board has submitted a five-million-dollar bond issue to a vote of the people. The bond issue will give the city five grade schools, two high schools, and additional units for four high schools.

—Cleveland, O. More than $20,000,000 will be required to run the schools during the coming year, according to budget requests of the clerk treasurer of the board. Chief among the items in the budget is $12,003,000 for teachers' salaries.

—Freedom, Pa. The school tax levy has been decreased from 21 mills to 20 mills.

—Lima, O. The school board has been compelled to find another way of obtaining financial aid, since the attorney general has withheld authority to borrow money. The attorney general held that the board might borrow money on present taxes but that it is illegal to loan money on future taxation.

—Bethlehem, Pa. An economy program that cannot be matched by other districts in the Lehigh Valley has been inaugurated by the school board by the strictest economy in keeping all expenses at a minimum, the board has been able to keep the property tax rate for next year at thirteen mills.

—Sioux City, Ia. In line with the general idea of economy in expeditures, the board of education has reduced the budget for next year by $41,980.

—West Chester, Pa. The school board has raised the school tax and per capita rates. An increase of one mill has been put into effect in

(Concluded on Page 112)

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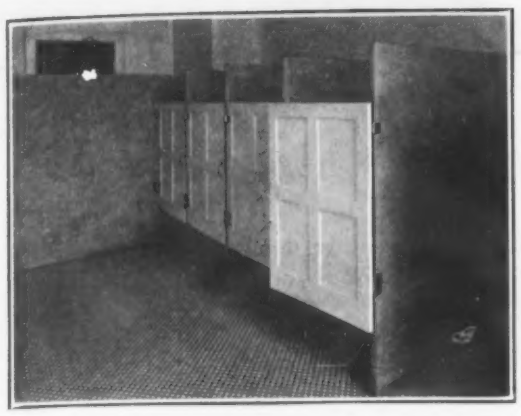

Alberene Stone Toilet Partitions—
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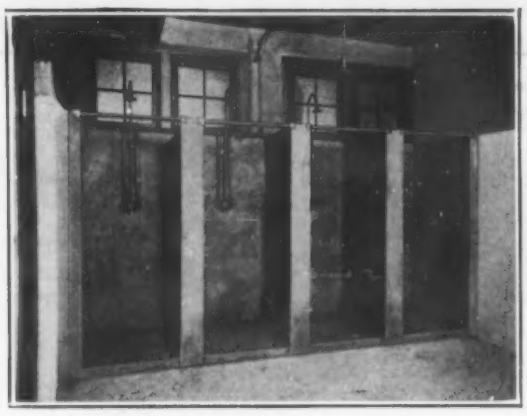

Alberene Stone Shower Compartments—
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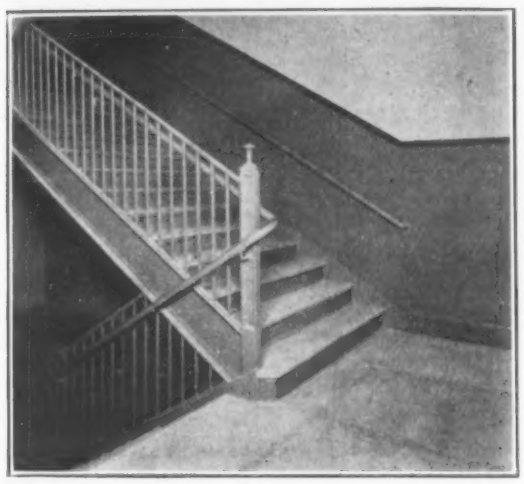

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(Concluded from Page 110)

making the tax rate fifteen mills. The per capita tax has been raised from $2 to $5.

—Tulsa, Okla. The voters have been asked to approve an excess levy of ten mills for the support of the public schools. The levy is necessary to eliminate a deficit of $1,502,386.

TEACHERS AND ADMINISTRATION

—Governor Dern of Utah has vetoed a bill providing for the regulation of teachers' certificates, requiring an oath of allegiance. The governor held that the measure is a restriction of free speech, and that to attempt to bar criticism is a step toward tyranny.

—Lincoln, Ill. Rigid health requirements for teachers and principals, and an age limit for the latter, have been established by the board of education. All persons making applications for positions in the schools must present health certificates, similar to those required by old line insurance companies.

The age limit of 65 has been set for principals of schools, although such age limit does not bar teachers from holding teaching positions.

—Mary R. L. Scott has filed suit in the district court against School District No. 2, near Casper, Wyo., for $637, which she alleges is due her as unpaid salary on a teacher's contract. Miss Scott was employed as a teacher last September and taught until March, when she alleges she was unlawfully discharged.

—Carthage, O. Contracts to be signed by teachers for the next school term contain an agreement clause that if the teacher marries during the school term, she automatically releases the board from the contract. This leaves the board free to retain the teacher for the remainder of the term, or to dismiss her as the judgment of the members dictates.

—The state department of public instruction of Wisconsin has rendered a decision to the effect that it is unquestionably the duty of the school board to keep the schoolhouse and equipment fully insured in behalf of the interests of the district. If there is no money available in the treasury, the board is authorized by statute to give a note for the amount of the premium. While it is not specifically required that the board visit and examine the school district premises at the close of school, it is advisable that the board shall perform this service, and that it shall determine whether the buildings are safe from danger of fire, and whether the apparatus and equipment of the building are properly cared for.

A decision has been rendered to the effect that a contract entered into between a school board and a teacher for a term of nine months is invalid, if the teacher does not at the time hold a certificate or license. There is no authority which warrants a board of education to enter into any such contract in behalf of the district.

NEWS OF SCHOOL OFFICIALS

—Mr. William E. Miller, president of the board of education of Newark, O., died at his home in that city on May 16th, following an attack of apoplexy. Flags on all the school buildings were at half-mast until the funeral which took place on May 18th. Members of the board of education and Supt. O. J. Barnes and Principal H. F. Honinger acted as honorary pallbearers at the services.

Mr. Miller lacked six months of completing his 25th year as a member of the board, a great part of which had been spent as its president. Maintaining his preference for schools, he took great interest in his membership on the board and gave liberally of his time to school matters.

—The school board of Akron, O., has eliminated the position of business manager, following the resignation of H. S. Morse.

—Judge E. C. Day of Helena, Mont., has retired as a member of the school board of that city, after a service of 25 years. The retirement, which was made necessary because of ill health, ends a long service, during which the judge was responsible for building up the teaching corps and for improving the school plant. He realized his ambition in the completion of a building program which has given the city a very fine school system.

—Mr. George J. Ryan, president of the board of education of New York City, has been unanimously reelected for a fourth annual term. Mr. Ryan in accepting another term on the board, declared he felt it a duty to continue in his present position until certain important undertakings have been accomplished. Mr. Ryan in his speech of acceptance, made a brief reference to salaries for the first time since the governor vetoed the bill increasing the teachers' pay.

Speaking of the school-seating problem, Mr. Ryan said that the building program for the current year ending March 31st next, contemplates 61 buildings, with 100,311 additional accommodations. He believes that the aim to supply a seat for each child in the school system will be close to realization.

—Col. Edward B. Ellicott, on May 15th, was sworn in as a member of the board of education of Chicago, and was then elected president of that body. The six new members of the board, whose appointment was confirmed by the council, were present to attend the first meeting.

—Mr. H. J. Wendell has been elected secretary of the school board of Manitou, Colo.

—Mr. J. G. Stearley assumed his duties as business manager of the school board of Oklahoma City, Okla., on May 12th.

—Dr. Benjamin W. Stillwell has resigned as a member of the board of education at Yonkers, N. Y.

—Douglas Knox has resigned as a member of the school board of Emmett, Ida., after a service of 52 years. Mr. Knox, who is 82 years old, has completed a record which is probably unparalleled in the country. Mr. Knox was elected to the board in 1872, and witnessed the erection of the first independent school in the district. The first building was erected by subscription, the materials costing about $600 and the labor donated. The present school property is valued at a quarter of a million dollars, and the entire plant was acquired during Mr. Knox's incumbency.

—Mr. Philip Sweed has retired from the school board of Petaluma, Calif., after a service of 35 years.

—Mr. A. M. Bryant has retired from the school board of Buckley, Wash., after a service of 25 years. Mr. Bryant was elected to membership on the board in 1897. He leaves the board knowing that the school system is modern and the plant adequate and up-to-date.

—Mr. Edward Beatty has been reelected as head of the public schools of Warrensburg, Mo.

—Mr. W. C. Shaw of Okeene, Okla., has been elected superintendent of schools at Newkirk.

—Supt. W. Z. Bates of Eastland, Tex., has been reelected for another year.

—Mr. Earl Dille of Cameron, Mo., has been elected superintendent of schools at Chillicothe, to succeed J. R. Kerr.

—Mr. R. B. Norman has announced his resignation as superintendent at Pecos, Tex.

—Supt. R. W. Fairchild of Elgin, Ill., has been reelected for another year.

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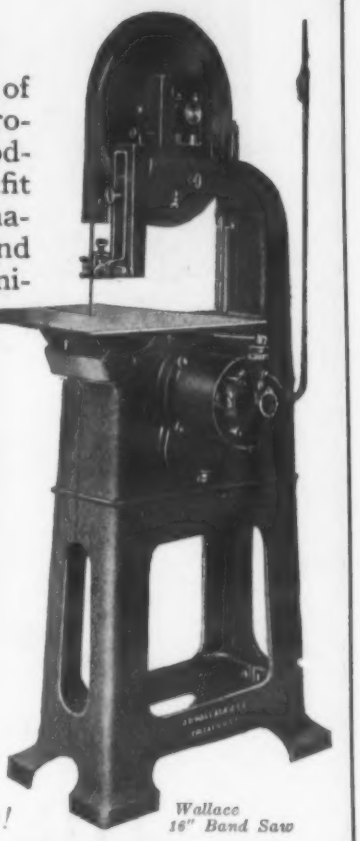

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TEACHERS AND ADMINISTRATION

THE FRICK EDUCATIONAL FUND

—A special tribute of appreciation to Mr. Henry Clay Frick, written by Supt. Wm. M. Davidson of Pittsburgh, was read at the annual scholarship dinner of the Frick Educational Commission.

During a period of fifteen years the schools of Pittsburgh have enjoyed the cooperation and substantial financial support of the Frick Educational Commission, organized a decade and a half ago by Dr. John A. Brashear, for the purpose of aiding him in handling a fund of $250,000 given by Mr. Frick, the income of which is used for the improvement of the work of the schools.

The fund was later increased to $500,000, and still later, by the will of Mr. Frick, to almost $3,000,000. The creation of a commission to handle the fund for the professional improvement of the teachers in the schools was a stroke of fortune, calling into service a group of men and women whose names at once gave assurance that the fund would be wisely and richly administered.

In the first group of awards a decade and a half ago, seventy teachers were granted free scholarships in well-selected schools of pedagogy. This year more than 300 teachers have been awarded scholarships by the commission. Since its founding $250,000 has been distributed by the Frick Commission in free scholarships, awarded to a total of more than two thousand teachers connected with the Pittsburgh schools. These teachers have attended 84 different institutions of higher learning distributed in every section of the country, and have brought back to the boys and girls of the city schools, the culture and inspiration of the leading colleges and universities of the land. The work accomplished by the Commission has made the schools of Pittsburgh a center of influence and power in the practical advancement and progressive development of all school work.

TEACHERS AND ADMINISTRATION

—New York, N. Y. Throat trouble, resulting from improper use of the voice in the classroom has been found to be the cause of a large percentage of absences of teachers. Because of this fact, Dr. William O'Shea, superintendent of schools, has asked the associate superintendents to bring the condition to the attention of the district superintendents and principals. Assistants to principals must continue to assist and guide inexperienced teachers until good and proper methods of teaching are established.

In order to revise upward the rates of contributions of New York City teachers to the pension fund because of the enactment of the five-year average salary pension law, the board of retirement has referred to a special committee for consideration the procedure to be followed.

The report of the actuary verifies an announcement that teachers will be required to pay higher rates to obtain the benefits of the higher pensions based on the average salary of the last five years.

Under the terms of the new law there will be a change in the rate of contribution of new entrants, since new entrants are required by law to contribute a rate computed to be sufficient to provide for them on the attainment of the minimum age of eligibility for retirement an allowance of one-quarter salary. New entrant teachers will probably not want to make any lump sum payments to the fund so that an adjusted rate will have to be computed in order to comply with the law and to make the change of rate easy for the new teachers.

Present teachers who have elected to pay a rate of contribution sufficient to provide their share of a half average salary retirement allowance will need to change to a new rate and a calculation similar to that made for the new teacher will be required.

—Miss Sarah Coggin, a grade teacher in Brooklyn, N. Y., was the guest of honor on May 5th at a party in celebration of her fiftieth year in the service of the schools.

—Perry, N. Y. The school board is offering a bonus of $75 to teachers who complete summer courses. The entire faculty for the next year has been signed up.

—Duluth, Minn. The school board has adopted a rule that no additional married women shall be employed in the instructional service of the public schools, unless they are dependent upon themselves for their support. Any woman teacher who marries during the school year will not be reappointed. The rule does not affect married women at present on the teaching staff.

—All discriminations on account of sex in the employment of teachers for public educational institutions are forbidden by a recent act of the New Jersey legislature.

—Terre Haute, Ind. The board of education has recently adopted a series of progressive rules, governing the improvement of the teaching staff, the single salary schedule and provisions for additional training to improve teachers in service.

One of the rules requires that teachers who have taught five years without attending a summer school, and who are without credits in at least two subjects, shall be declared ineligible for reappointment. The rule is to become effective in June, 1926.

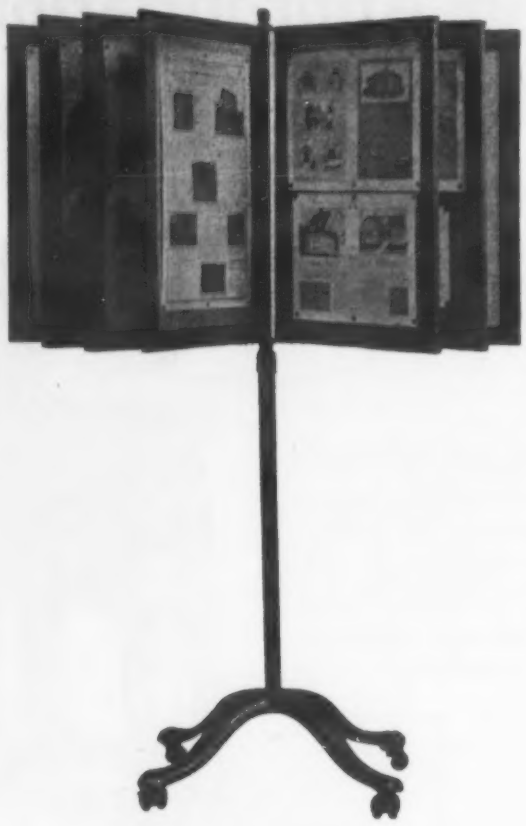
—Lima, O. Members of the board of education have adopted a rating card system for principals, supervisors and teachers. The system is similar to that used in large business houses and becomes effective next September.

The regulations on qualifications for teaching require only that those who are graduates of a first grade high school, or who present credits equivalent to such graduation, plus two years of training of college or normal school rank, may hereafter be eligible to appointment as teachers in the schools.

Teachers are also required to present credits for at least six hours of additional training for every three years of service. Not more than half of the required credit may be received for extension work.

Teachers new to the system, or teachers with less than one year of experience, are on probation.

The salary schedule which is based on experience, ranges from $1,000 to $1,500 for teachers in the elementary grades; from $1,200 to $1,900 for those in the high school. Principals of grade school will be given $25 additional a year for each teacher under their charge.



DISPLAY THE BEST

work of your pupils, it will encourage them and act as an incentive to the others.

For this purpose as well as for a school BULLETIN BOARD the SHEWANA DISPLAY Cabinet is ideal, it has fourteen display surfaces, a total of 55 square feet, all in an arm's length.

The display panels swing on a newly patented hinge which folds flat, making the cabinet dust proof when closed, each panel is covered with a heavy buckram—an ideal surface for thumb tack use.

The cabinet is noiseless in operation, rugged and permanent, it is built of hard wood and finished in keeping with the best school furniture.

The SHEWANA is now made in three styles and can be furnished either as a wall fixture, with standard for table top, or with floor stand on casters as illustrated.

Write Dept. B for prices and complete description.

THE SHEWANA CABINET WORKS

Shipshewana, Indiana

—Leon, Ia. The school board has adopted a rule that a teacher who marries after contracting for the school year, shall forfeit her position.

—Mt. Vernon, Ia. The school board has adopted a policy not to employ married women as teachers. Any teacher who marries while in the employ of the schools must resign.

—Pittsburgh, Pa. The last high school has been equipped with a time clock and teachers will begin punching time cards. The device was originally introduced in the high schools to enable the office staff to tell at a glance if a teacher is in the building.

—Metropolis, Ill. The school board has adopted a rule requiring single teachers of both sexes to sign a contract not to marry during the school term. It is believed that marriage during the school term has a tendency to divert the attention of the students of marriageable ages from their studies.

—Chicago, Ill. Supt. William McAndrew has ordered that teachers wear longer skirts. Mr. McAndrew holds that brevity in dress is not appreciated in classrooms and that teachers should appear well and suitably attired.

SALARIES AND COST OF INSTRUCTION IN NORTH CAROLINA

The state education department of North Carolina has issued the third of a series of special reports on cost of instruction. The present one deals with the total cost of instruction in both elementary and high schools. All expenditures for teachers' salaries are included, both the expenditures that are paid from the general county six-months' fund and local taxes. The total expenditures for salaries are taken from the financial reports submitted at the close of the fiscal year and used as the basis in figuring the average cost of instruction.

The report shows that the 24 largest city systems paid the largest annual salaries. The average white teacher in these large city schools was paid $1,300 last year, 1923-1924. The average salary for each colored teacher in these largest city systems was $771.

All city schools, taken together, paid the second highest average salary to both white and colored teachers. They paid the average white teacher $1,195, and the average colored teacher $687.

The average annual salary for both white and colored teachers in the fifteen smallest charter schools was just below the average in all cities. The little cities paid the average white teacher $1,038, and the average colored teacher $487.

The average salary for all schools in the state was next to the bottom. The state average for white teachers was $799, and for colored teachers $436.

It is found that the 24 largest city schools also lead other groups in the amount spent for each enrolled child for teachers' salaries. This is true of both the white and colored schools. The per capita expenditure for teaching in these cities was $40.91 for each white child and $16.19 for each colored child.

The city schools, the fifteen smallest cities, the state as a whole, and the rural schools follow next in order as to the per child cost of teaching in 1923-24. The per capita cost in the white rural schools was $20.22 for each child, while in the cities the cost was $36.42. In the rural schools the cost was $7.43 and in the city colored schools it was $15.88.

The state average cost of teaching each child was $24.07 in the white schools, and $8.98 in the colored schools. The white rural per capita cost was 55.5 per cent of the white city cost and the colored rural cost was 46.8 per cent of the colored city cost.

The report shows that the average white teacher's salary has increased from $148.22 in 1904-1905, to $799.70 in 1923-1924, an increase of 439.5 per cent. The per capita cost of instructing white children has increased 65.4 per cent, or from $3.19 to $24.07 in twenty years.

The per capita cost of teaching was highest for both white and colored in Greensboro at $56.39 for the white and $22.50 for the colored. Durham ranked second as to per capita cost of teaching both white and colored children. Mooresville, with a per capita cost of $26.54, ranked lowest as to the amount spent for teaching each white child. Concord was just above Mooresville in rank.

New York Pension Law

An amendment to the teachers' pension law of New York State, adopted by the recent session of the legislature, fixes the amount of the annuity to be paid at one-half the average salary received by the teacher during five years preceding retirement and the old law fixed the annuity, at one-half the average of the last ten years' service.

While the new law will give the teachers a higher return, it will require an entire revision of the rates of contribution. Both the city and the members of the teaching corps, who each pay half of the fund, will be obliged to increase their payments. Teachers who had not been in the service 35 years, back in 1897, will be obliged to pay an amount equal to the deficiency in the amount paid since that year and the amount which they would have paid had the new rates been in effect since that year.

The Longmeadow Salary Schedule

On May 19th, the school board of Longmeadow, Mass., adopted a salary schedule for teachers, providing for minimum and maximum salaries and definite yearly increases. Teachers are divided into three classes, according to length of training.

Class I is composed of teachers with four years' training beyond the high school. Teachers in this group are given a minimum salary of $1,200 and a maximum salary of $1,900, with five yearly increases of $100 each, followed by four yearly increases of $50 each.

Class II is composed of teachers with two years' training beyond the high school. Teachers in this group are given a minimum salary of $1,100 and a maximum salary of $1,800, with five yearly increases of $100 each, followed by four yearly increases of $50 each.

Class III is composed of teachers with less than two years' training beyond high school. Teachers in this group are given a minimum salary of $1,000 and a maximum of $1,700, with five yearly increases of $100 each, followed by four yearly increases of $50 each.

New teachers will be allowed $100 for each year of successful teaching experience elsewhere up to two years, and $50 for each year in addition.

Principals and teachers now in service will be given annual increases of $100 until they have reached the maximum in the schedule, and thereafter will be advanced as provided in the schedule.

Principals will be given a minimum of $1,600 and a maximum of $2,100, with two yearly increases of $100 each, followed by six yearly increases of $50 each.

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Bookkeeping Machine
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For—
Accounts Payable
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Underwood
Portable Typewriter
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Weight 6¾ lbs. uncased; 9¾ lbs. cased

Underwood
Revolving Duplicator
Produces 3600 copies an hour. Either typewritten, handwritten or hand drawn copy may be used.

WITH the opening of the schools but a few weeks away, school officials and board members are thinking of equipment for the new year. The Commercial Department is now an important factor in schools everywhere; and the purchase of the proper equipment and machines is a problem that confronts many school executives.

In buying machines for instruction purposes, thousands of schools have specified "Underwood". The popularity of the Underwood Standard Typewriter is shown by the fact that more Underwoods are used for teaching typewriting than all other makes combined.

The Underwood Bookkeeping Machine, too, is used in many schools for teaching accounting. Its simplicity and adaptability to many kinds of bookkeeping make it admirable for instruction purposes.

For school and personal use teachers and school officials have found the Underwood Portable Typewriter helpful in their work. Light, compact and easily carried from one place to another, the Portable has many of the stuctural advantages that have made the Standard Machine famous.

The Underwood Revolving Duplicator is a time-saving assistant that helps many teachers in reproducing quantities of examination papers, programs, and other forms. It relieves the teacher of much tedious work and eliminates printing bills.

If you are interested in any of these machines for school use, mail the coupon below. The nearest Underwood representative will gladly give you complete information.

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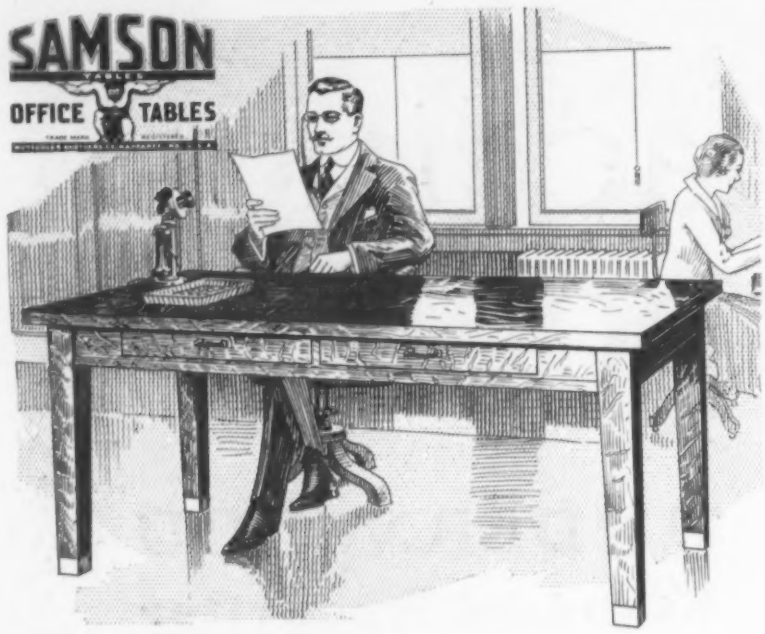

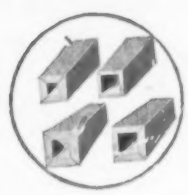

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HIGH SCHOOL ADMINISTRATION

A STUDY OF HIGH SCHOOL ORGANIZATION

The school authorities of Revere, Mass., recently completed a study of high school organization in 26 Massachusetts cities. The study included questions concerning heads of departments, and their work; assistant principals; pupil membership of the school, and deans of girls and their work.

A tabulation of replies received from the respective city superintendents showed that nineteen have heads of departments, one has none, and one did not reply. Five cities had ten or more heads of departments, two had eight, one five, and two four.

The question concerning number of periods department heads teach brought out the information that ten taught twenty or more periods per week; one taught seventeen to twenty periods; one, sixteen to twenty; one, one-half of full time; one, two-thirds of full time; and two, four-fifths of full time.

The question concerning number of assistant principals revealed that 22 have assistant principals, while two have none. Of the 26 cities, one has six assistant principals, eight have two, and thirteen have one apiece.

Assistant principals in four city schools teach from twenty to 25 periods, two teach 25 periods, five teach fifteen periods, and one teaches one-half of the full time.

Pupil membership was found to reach two thousand or more in four schools, one thousand or more in eleven schools, and less than one thousand in eight schools.

In nine city high schools, heads of departments are paid $200 or more above the high school maximum, in one they are paid $300, in two $100, and in two $500 or more above the maximum.

In eleven city high schools, a dean of girls is employed, while in thirteen schools no such dean is in existence. In these city high schools, two deans teach twenty periods per week, one 25 periods, one sixteen, one fifteen, and one teaches one-half of the full time. Two deans do not teach at any time, and thirteen did not report. The dean is paid $100 above the maximum salary in five high schools, $200 or more in two schools, and $400 in one school. One school reported no advance in salary paid, and fifteen did not report.

The cities reporting their statistics were Beverly, Brockton, Chelsea, Chicopee, Everett, Fall River, Fitchburg, Gardner, Gloucester, Haverhill, Holyoke, Lawrence, Lowell, Lynn, Medford, Melrose, New Bedford, Newton, Peabody, Pittsfield, Quincy, Revere, Salem, Somerville, Taunton, and Waltham.

High School Scholarship Lists

At Canastota, N. Y., a scholarship list, arranged in the order of the scholastic rank, is prepared each month and published in the local newspapers. Any interesting material such as the list of students who leave school, the scholastic summary, and the registration of the various rooms is added to the list. The list keeps the public informed of the activities of the school and it maintains a healthy rivalry among the students in raising their rank and standing on the list.

HIGH SCHOOL ADMINISTRATION

—New York, N. Y. Representatives of the Service League and the Arista Society of Morris high school have asked the teachers' council to enforce the board of education ban on honor recognition of fraternity members. Not only bona fide members of fraternities, but those who pledge themselves to join secret societies would be barred from the school's honorary organizations.

—Canastota, N. Y. Under the direction of the principal, Mr. J. Harvey Leneker, a system has been introduced in the high school for raising the scholarship of the high school. Under the plan, the teacher gives the student at least each week two class marks. These are averaged at the end of the month. During this period, also, the teacher has one written test taking an entire recitation period. In addition, the teacher may give as many short, written tests as she may desire. The average is made of the written quizzes and this average combined with the class mark average. The final average is sent to the pupil's home during the first week of the month as the estimate of the students' work during the preceding month. The plan takes care of those who recite well, as well as those who write well.

—Omaha, Neb. Condemning high school fraternities as cliques, which are against the best interests of the school, Dr. J. H. Wallace, a member of the board of education, has presented a resolution, proposing that the deadline be drawn on September 1, 1928, after which students belonging to self-perpetuating social clubs shall be expelled from school. Dr. Wallace directed attention to a state statute, and to the number of these societies in one high school.

—Rock Island, Ill. High school graduates were attired in caps and gowns at the recent commencement exercises. The board adopted the policy of uniform commencement dress twelve years ago, with the idea of having all members of the class on an equal basis.

—Commissioner of education John Enright of New Jersey has issued a report showing that of more than 10,000 eighth grade pupils examined in subjects essential for admission to high school, approximately thirty per cent failed to attain a passing mark. Less than twenty per cent received a mark as high as 90. The greatest number of failures was in arithmetic, with English as the next in order.

—A longer school day has been adopted for the high school at Pontiac, Mich. Beginning next fall, high and junior high sessions will begin at 8:45 a. m. and close at 3:30 p. m. The change offers an additional period of recitations and permits of more elasticity in making the program.

—Tacoma, Wash. Seventy-nine students of the Lincoln and Stadium high schools have been dropped from these institutions for failure to make passing grades in at least two subjects. The dismissals followed a ruling of the board in December, that any pupil failing to obtain passing grades in two subjects should be dismissed at the end of the first or third quarters of the school year.

Under the rule, return to school the following semester is contingent upon the pupil's willing-

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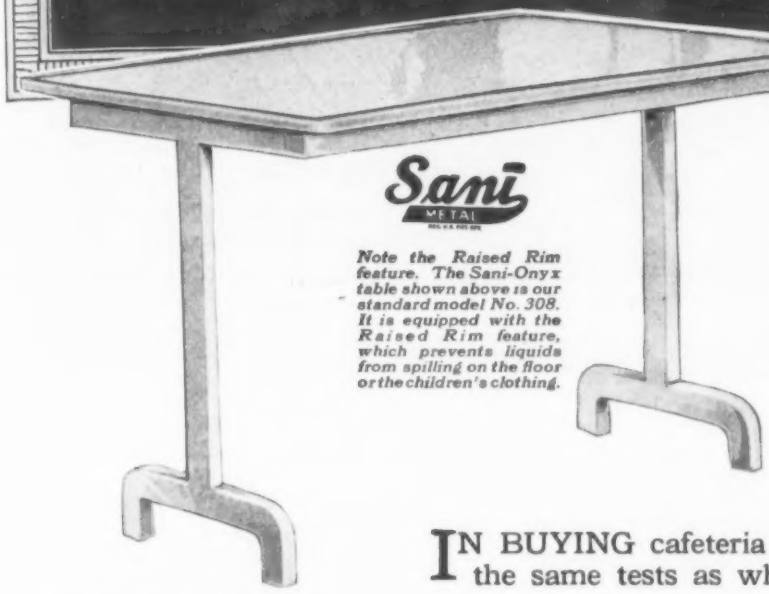

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IN BUYING cafeteria equipment for your school you should apply the same tests as when making any other permanent investment.

Is It Serviceable—

The real test of school cafeteria equipment is the test of service. ***Sani*** food and drink equipment for school cafeterias gives satisfactory service year after year.

Is It Sanitary—

The snow-white ***Sani***-Onyx school cafeteria equipment shown above spells sanitation and healthfulness. Simply wiping with a damp cloth keeps it clean, sparkling white and inviting. ***Sani***-Onyx counters and ***Sani***-Onyx porcelain enamel table bases cannot be injured by wet brooms or mops, and collect no dirt. Cannot rust or rot. Benefits the school children, providing a clean, inviting place to eat.

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Ten years—even a lifetime of scraping trays, spilled liquids, dropped dishes, the scuffing of many feet, the boisterous horseplay of Young America, the effects of mops and brooms will not change the appearance and serviceability of ***Sani*** school cafeteria equipment.

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If you are planning a school cafeteria installation, write to the nearest fixture supply house or to this office, for information. Be sure to send in outline drawing showing dimensions of the room to be used, the location of doors and windows, interior columns if any, and state number of persons you desire to feed at one time. We will furnish you a blue print free of charge. Write today.

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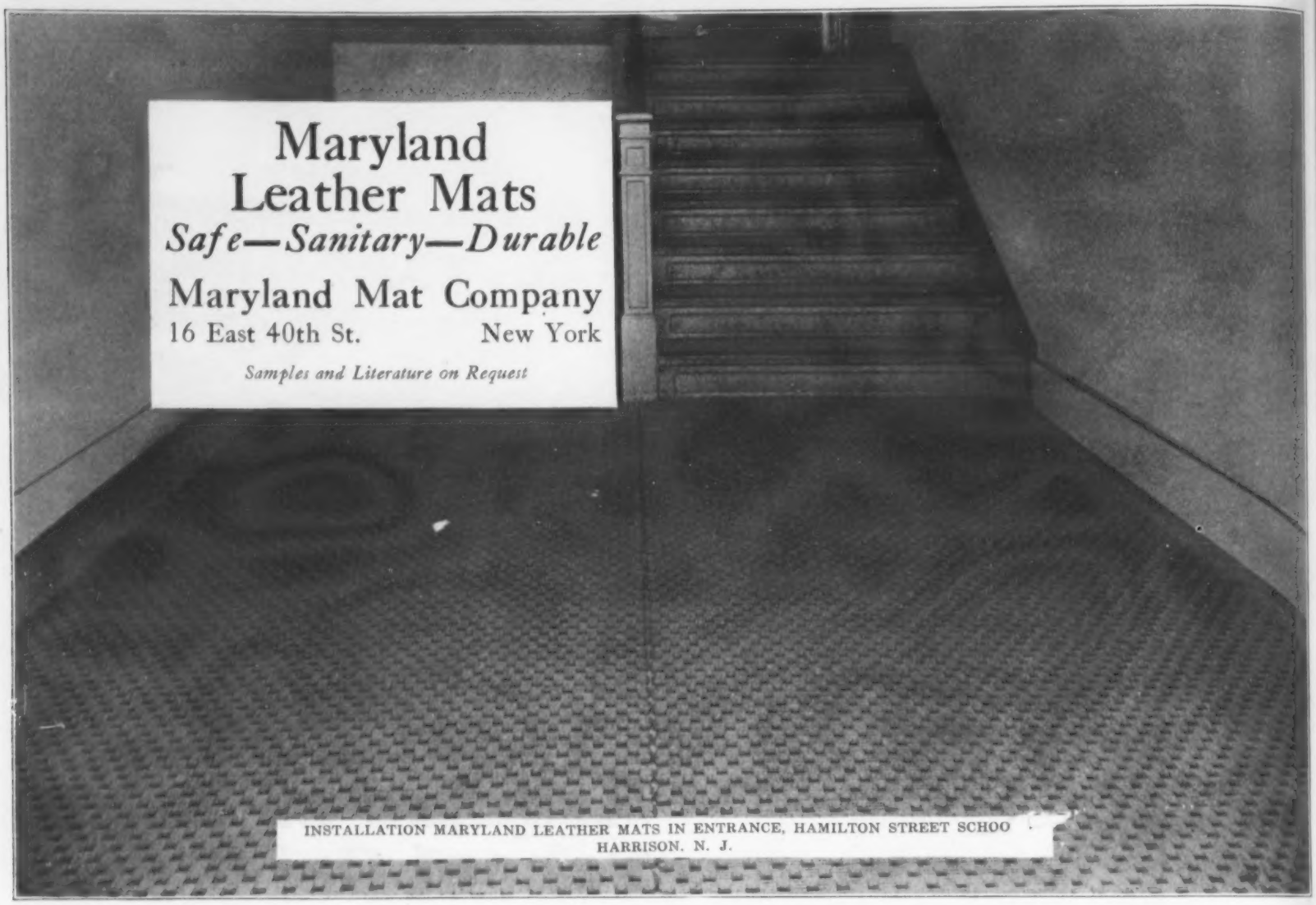

INSTALLATION MARYLAND LEATHER MATS IN ENTRANCE, HAMILTON STREET SCHOO
HARRISON. N. J.

(Concluded from Page 118)

ness and earnestness of purpose in carrying on where he left off.

—Supt. E. R. Whitney of Schenectady, N. Y., has issued a special bulletin to schools, urging greater cooperation between the principal and the department heads in the high schools, in order that the general class and study work may be improved. Instruction and administration are not to be confused, however, the bulletin emphasizes, although provision for an amicable clearance of both through the appropriate channels are recommended.

In preparing outlines, it was urged that department heads confer with the teachers, one or more of whom may be assigned to each subject for study, since teacher participation in plans and policies about teaching is greatly to be desired.

The bulletin discussed meetings of department heads, preparation of outlines for the term's work, uniform tests, preparation of examination questions, training activities, demonstration teaching, textbooks, supplies and supplementary books.

TRANSPORTATION COSTS IN A TYPICAL OHIO COUNTY

An interesting study of transportation costs in Cuyahoga County, O., has been prepared by Mr. Joseph A. Baer, assistant superintendent of schools, based on the figures of 24 consolidated school districts.

In the fall of 1924 there were reported a total of 28 school districts in Cuyahoga County, Ohio. Of the 28 districts, 24 transported at least a part of the pupils at the expense of the school district. Of the 24 districts, 23 reported on the cost of transportation.

Of the 23 districts reporting, 3,104 pupils were transported daily, at a total cost for the year just passed of $83,997, or $24.58 per pupil per year. On the basis of 180 school days to a school year, this is an average of 13.6 cents per day per pupil transported.

For the year 1921-1922, 22 of the states of the country reported 446,226 pupils transported, at a total cost of $14,526,368, or a cost of $32.55 per pupil per year, and 18.1 cents per pupil per day on a nine months' basis. The cost of transportation in Cuyahoga County is not excessive when compared with the country at large. The conditions in this county are very favorable for reasonable transportation and there are miles of paved road which make motor bus transportation both practicable and economical.

Transportation is afforded by means of motor busses, touring cars, wagons and trolley cars. A total of 45 school busses is used, of which seventeen are owned by boards of education and 28 are privately owned. In addition, two or three touring cars are used for small groups of children living at a distance from the remaining children. The seventeen board-owned busses are valued at $32,000. Twenty-four wagons are still in use. Eighteen of these are owned by boards of education, and six are privately owned. Three districts transport almost entirely by means of wagons. One district transports all the pupils by trolley car because this type of transportation is convenient and entirely feasible. Four other districts transport a part of the pupils by trolley.

Owing to the mixed nature of the transportation methods, it has been almost impossible to determine which method of transportation is most economical. The figures appear to indicate that trolley transportation is the cheapest when available, but it is not always available. Boards are able to furnish transportation cheaper with board-owned busses, than similar transportation can be obtained from private or commercially-owned busses. The exceptions are South Euclid, which makes use of a regular bus line; Richmond Heights, which uses a privately-owned bus, and Olmstead Falls, which took bids on wagon transportation and allowed the contractors to use their own busses. Wagon transportation in Royalton and Solon is more expensive per pupil per day, than the average cost per pupil for the county; it tends to be quite expensive, second only to the privately-owned motor bus type of transportation.

The great variety of types of transportation and methods used has made it difficult to determine the cost per day per pupil, per mile, a unit which is advocated at the present time. It seems safe to assume that the cost per mile per day is not excessive, since the cost per pupil per day, is only 13.6 cents. The average distance traveled each day, round trip, is perhaps four miles. Using this figure, the cost per pupil per mile, per day, is 3.25 cents. Compared with the steam road passenger rate of 3.6 cents per mile, the cost of transportation is not excessive.

It is estimated that each pupil would travel 9.4 miles per day, round trip, and at a cost of 3.8 cents per pupil per mile, this would make the cost of transportation 31 cents per day per pupil. The distances traveled vary greatly. The shortest daily distance is four miles, while the longest by motor bus, two trips, morning and evening, is 47 miles.

The cost of operation includes gas, oil, garage service and repairs on board-owned vehicles, as well as drivers' wages. Depreciation was estimated at twenty per cent on wagons and Ford busses, and ten per cent on the larger busses.

A study of the variations in cost of transportation reveals that six districts, which depend upon privately-owned or commercial busses appear to be paying high prices for transportation. One village transports entirely by trolley, which results in a low per pupil cost, but has a high index number because they pay for many pupils really within walking distance. One district has a difficult transportation problem because of the transportation of high school pupils to nearby towns and cities. Five districts have reasonable transportation costs because of board-owned busses. One district pays slightly more than these districts, but is within a reasonable range considering both distance and number of pupils.

Reorganization of the Pennsylvania Department of Public Instruction

The first steps toward the reorganization of the state department of public instruction were taken on May 29th, when Francis B. Haas, state superintendent, appointed four new deputies in his department. There have been two deputy superintendents, Mr. Haas having filed one prior to his selection as head of the department.

James N. Rule, of Pittsburgh, will have charge of the secondary education work which was supervised by him in the past; William M. Denison of Troy, in charge of the attendance bureau, has been made deputy of administration, succeeding Mr. Haas. The other three deputies are Robert C. Shaw, Greensburg, a member of the field service, deputy of the Bureau of Rural Education; Dr. C. D. Koch, Harrisburg, a deputy with responsibilities for the work of the various boards and commissions, and L. H. Dennis, of Camp Hill, a deputy in charge of vocational education.

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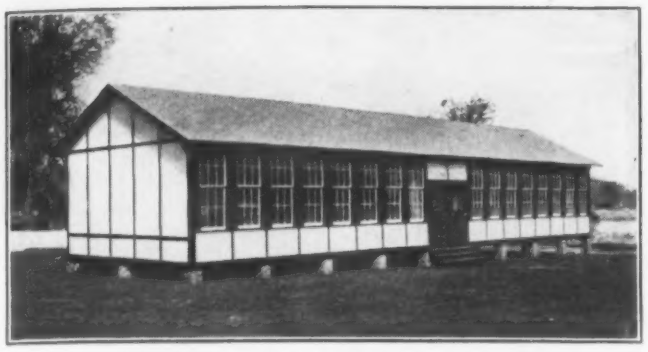

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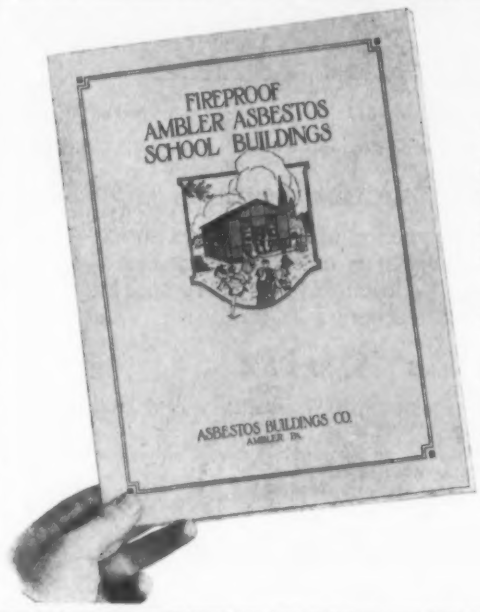

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NEW PHYSICAL INSPECTION LAW FOR OREGON

State Superintendent Churchill of Oregon has begun work upon the details by which a new state law providing for physical inspections of children by teachers will be carried out. The law which was originated and sponsored by Mr. William F. Woodward, a member of the Portland school board and also of the lower house of the state legislature, provides that the teachers shall call the attention of parents to suspicious conditions, and advise consultation with the family physician. No inspection of a child will be made where the parent asks that his child be exempt.

The plan provides for the use of blank forms, which will be distributed to teachers for the purpose. Terms on the records have been simplified for the use of the teachers and all personal information has been eliminated. The cards must show whether the defects noted have been corrected by the end of the year, the entire object of the plan being to remove physical defects which retard school work.

The law has been modeled along the lines of the Massachusetts measure, which in that state was sponsored by the late Joseph Lee. It is believed to have especially beneficial effects in a state like Oregon, where schools are located in remote sections, where the presence of skilled medical or surgical attention is difficult, and where children of necessity would struggle through the early years carrying the burden of physical handicaps.

CONTROL OF COMMUNICABLE DISEASES

The Connecticut state department of education has issued a notice pointing out that it is the duty of every teacher to know that the regulations of the state health department, as established in the "sanitary code" require.

1. The teacher of any public, private, parochial, or Sunday school, having under his or her care a pupil who appears to be affected with a disease, presumably communicable, or a pupil who has been exposed, or presumably exposed, to such disease, shall immediately report the name and address of such pupil to the physician in charge of the school, or to the health officer; such report to be made directly or through the principal of said school. When such child is in attendance at school, it shall be promptly sent home or separated from other pupils until examined by the school physician or health officer. Any pupil excluded by reason of actually having, or having been exposed to, a communicable disease shall not be readmitted to school without the permission of the health officer.

2. When any school child has been affected with, or is a carrier of, a communicable disease, or has been excluded from school because of having been in contact with a communicable disease, it shall be the duty of the health officer to issue to such a child a permit to re-enter school, when in his opinion such child is no longer infectious.

Preventive measures which every teacher can and should establish and maintain are as follows:

1. The morning health inspection. This is the first line of defense. The responsibility for detecting the first signs of deviation from the normal, in previously healthy children, rests with the teacher. It is not expected that she will be a diagnostician, but simply that she can, through her greater familiarity with the pupils, and through the opportunity which her contact with them in the classroom affords, detect almost at the beginning any deviation from normal health in the pupils under her supervision.

2. The common drinking cup, towel, comb and brush should be abolished. It has been demonstrated by experiment and experience that the common usage of cups and toilet articles is a source of danger. Certainly they are unclean objects and have no place in the school.

3. Pupils should be taught to cover the nose and mouth with a handkerchief when coughing or sneezing. This is the most effective measure for preventing the spread of colds and other spray-borne diseases. The use of the handkerchief (a clean one daily) when coughing or sneezing should be the one unbroken rule of the schoolroom.

4. All classes should be inspected immediately upon the opening of school in the fall and after each vacation. The purpose of this precaution is to detect cases of communicable disease which have been developed prior to the opening of school but which have not yet given rise to the characteristic signs and symptoms, and to cause the exclusion of such cases from school. It is a means of protecting the remainder of the class.

5. The principles of sanitation and hygiene should be applied to the schoolroom and its furniture.

6. The principles of personal hygiene should be observed. Teach the pupils to wash their hands before eating, and after visiting the toilet; to wash all fruit before eating; never to "swap bites" of apples or any other article of food; to bring a clean handkerchief each day and to use it; to clean the teeth at least twice daily; to use individual cups, etc.

7. The exchange of working utensils should not be permitted. The common practice among pupils of moistening the tip of a pencil with the lips and of biting on wooden pencils, penholders and paintbrushes should be discouraged at every opportunity. The danger of disease transmission by objects of this type can be controlled by strictly prohibiting exchange of common usage if they are furnished from the school supply.

8. The room should be thoroughly ventilated and flooded with sunshine during all physical education periods and after each session.

9. The water supply should be protected from all possible sources of contamination.

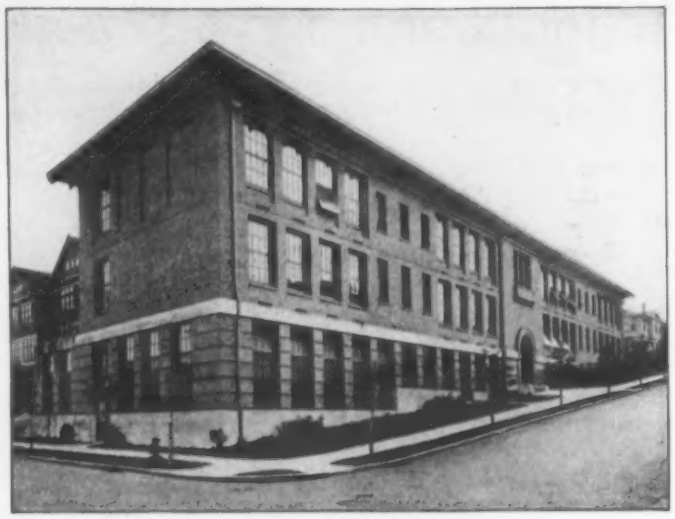
10. Regulations governing the exclusion and readmission of pupils should be established.

11. All pupils should be inspected daily when two or more cases of a disease are found in the same class.

In the absence of school health officials the teacher should be authorized to send the pupil home with a note of explanation to the parent. In rural districts where the pupil may be one of many to be transported by school bus, there is an additional danger. A situation of this kind should be left to the judgment of the teacher, and if in her opinion the case is apparently one of the communicable type, she should have the power to engage a private conveyance to take the child home at once.

The teacher should never make a diagnosis nor give suggestions for treatment. It is sufficient to state her reason for excluding the pupil in terms of what she actually found.

The teacher is justified in excluding pupils upon finding one or more of the following conditions: Nasal discharge; cough; red, watery or sore eyes; flushed face; chills; rash or sores; vomiting; sweating not otherwise accounted for; aches and pains; general appearance, such as



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drowsiness, dullness of eyes, pediculosis, and sore throat.

When a child is injured or is taken acutely ill, the teacher should not hesitate to send for the nearest available physician.

HYGIENE AND SANITATION

—The state education department of New York has adopted qualifications for the approval of school nurses under the provisions of the special section of the New York education law which becomes effective in September, 1925. The qualifications are:

1. Graduation from an approved four-year high school course or its equivalent.
2. Graduation from a training school for nurses registered by the regents of the University.
3. Certification as a registered nurse in New York State.
4. Completion of at least six semester hours in approved professional courses in health education.

Limited licenses may be issued for a period of three years. During this period school nurses who otherwise qualify but who have had not more than six semester hours of professional work in health education, must complete additional approved courses to the extent of one summer's work of not less than six semester hours. At the end of this limited period, on proper evidence of the completion of required professional work and at least two years' successful experience as school nurse, the limited certificate may be made permanent.

—Dr. John A. Ceconi, Boston, Mass., has been appointed director of medical inspection in the Boston schools. Dr. Ceconi was a medical inspector in the schools in 1906, and in 1913 became an inspector and diagnostician in the city health department. In 1922 he was director of the bureau of communicable diseases.

—In the public schools of Greater New York, 37,000 children were found in need of psychologic service during the year ended June, 1924, according to inspectors of the board of education.

—The district court of Hennepin County, Minnesota, has handed down a decision, upholding the regulations of the board of education of Minneapolis, with regard to the examination of a pupil suspected of an infection of the throat. The decision was rendered in answer to a petition for mandamus to compel the principal to readmit without examination the child who had been excluded from attendance on account of a sore throat. The court held that the exclusion of the pupil till such time as she and the plaintiff complied with the rules of the board was legal and valid and necessary for the protection of the health of the other pupils in the school.

—Health certificates are required for all children entering the schools of Elmira, N. Y., for the first time. Clinics are conducted by school physicians every afternoon during the latter part of the summer vacation, as well as during the school year. Principals, teachers, and employees are examined every year.

—Thousands of lives might be saved annually if homes and schools were equipped with apparatus for the circulation of ozone, according to Mr. E. S. Hallett, chief engineer of the board of education at St. Louis, Mo.

Ozone, said Mr. Hallett at a recent convention of heating engineers, may be produced by chemical or electrical processes. Injected into a building to the extent of one part to a million parts of air, it effects approximately one hundred per cent purification. He showed that in the five years ozone has been used in the St. Louis schools, tuberculosis cases have been reduced more than fifty per cent. Other diseases also have been materially reduced.

—Battle Creek, Mich. An effort is being made by the board of health to bring all pupils in the schools up to a perfect physical standard. As a result of the efforts made in this direction, it is noted that the number of absentees and of physical defects have been materially reduced. It is reported that health workers receive almost unanimous cooperation on the part of parents. Parents are regularly notified of the conditions revealed in the examination and asked to consult with the family physician.

—Dr. John A. Ceconi has been appointed medical director of the public schools of Boston. Dr. Ceconi led the list of candidates who passed the civil service examination and was unanimously appointed. He is a graduate of Tufts Medical School, and was formerly a medical inspector in the schools. He has been a director of the bureau of communicable diseases and is the author of various works on medical subjects.

—Newark, N. J. Two physicians, representatives of the executive council of the Essex County, New Jersey, Medical society, recently appeared before the school board with the request that medical work in the schools be not extended in the future, and that steps be taken to limit the work to regular inspections of pupils. The complaint was directed against the purchase of certain equipment for the treatment of crippled children. It was pointed out that each year more and more money has been provided until it has reached a point where the board is performing work belonging entirely to the hospitals. The medical profession has viewed with alarm the increasing tendency to go into medical practice in the schools, holding that this work properly belongs to the hospitals.

—East Orange, N. J. The school board plans the employment of a full-time physician to take care of medical inspection work in the schools.

—Moline, Ill. Steps have been taken to prevent goiter, a condition now prevalent among school children. An examination of children by the school nurse has revealed that fully fifty per cent of the students suffer from thyroid gland enlargement.

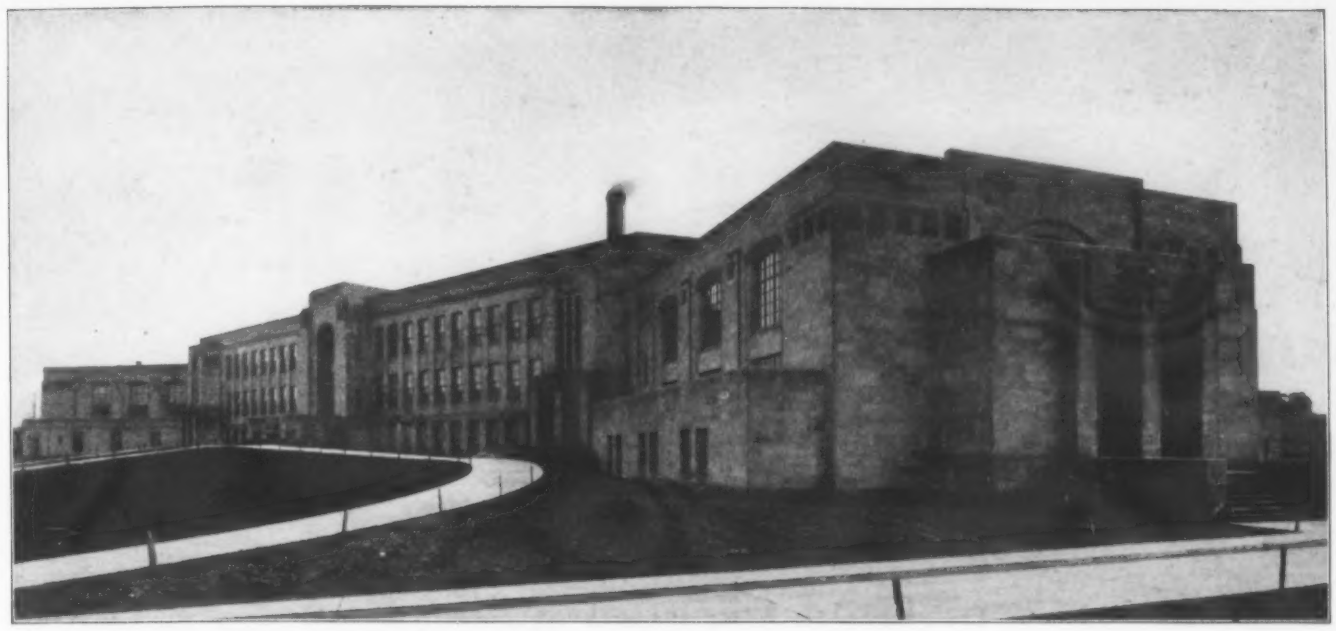
—Salt Lake City, Utah. Health centers for the summer will be conducted at four schools for the benefit of children about to enter the schools next fall. Children will be weighed, measured and examined.

—Portsmouth, Va. The medical inspection department was organized this year with a full-time medical inspector and three nurses to look after the health of 9,068 school children. In February, all pupils in the schools were given thorough medical examinations, leaving the department free to devote the remainder of the year to general follow-up work. Special examinations have been made of applicants for athletic teams, and all cases of contagious disease have been looked after. It is believed the results of the year's work will fully justify the wisdom of the new system.

—Mr. Uel W. Lamkin, a former state superintendent of Missouri, has been reelected president of the Northwest Missouri State Teachers' College at Maryville for a two-year term.

—Mr. W. R. Ash of Napoleon, O., has been elected superintendent of schools at Delaware. Mr. Ash is a graduate of Heidelberg University, of the Ohio Northern University, and completed post-graduate work at the University of Michigan. He had filled the office at Napoleon for the past seven years.

—Supt. A. F. Hixon of Ironton, O., has been re-elected for a five-year term at an increased salary.



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Our equipment, backed by fifty-one years' experience in the heating and ventilating field, is being installed in a large number of both new and old buildings.

The coming vacation period provides an ideal opportunity of replacing your old heating system with the new, modern, economical and health promoting Heatovent System. The Heatovent is very flexible, easy to install, simple to operate, and requires very little floor space. Old buildings in which no means of ventilation have been provided, can be readily and easily equipped with the Heatovent System.

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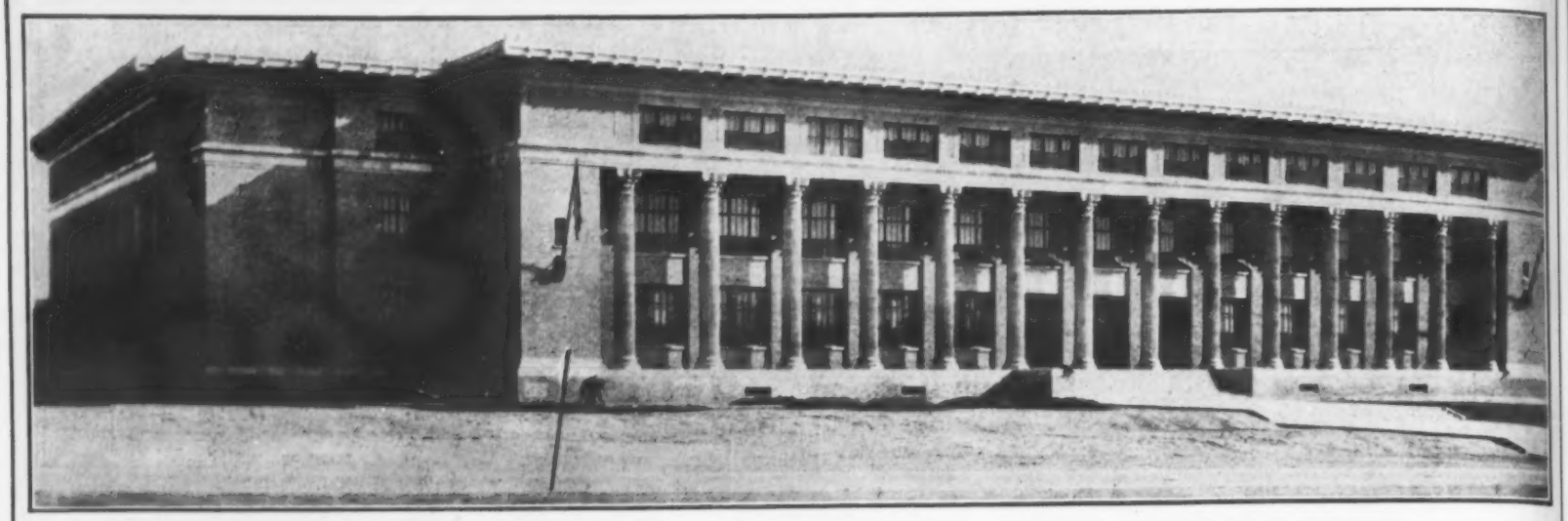
Dooly Bldg., Salt Lake City, Utah.
403-405 Sharon Bldg., San Francisco, Calif.
Rose Building, Cleveland, Ohio.



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"Buffalo" Fans and Carrier Air Washers in largest school building in Southwest

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SCHOOL ADMINISTRATION NOTES

THE ELEMENTARY RURAL SCHOOLS OF VIRGINIA

More than one-third of the enrollment in the elementary schools of rural Virginia is for the first time found in standard schools, as defined by the state board of education. Approximately 46,000 of this enrollment is in the standard elementary schools which are not constituent parts of standard accredited high schools. The remainder of the enrollment, about 84,000, is in the elementary grades of the standard accredited high schools located outside of the cities.

A marked increase in enrollment in rural standard elementary schools is due to a number of causes, chief among them being the increase in the number of standard elementary schools. Whereas in 1923-1924, 105 one-room rural schools were standardized, this session, 141 received standard rating; and while last year 149 two-room schools were approved as standard, this year 181 such schools met the standard requirements; and, while 198 three-room or more than three-room schools were found to meet the standard requirements, this session 244 such schools were accredited. Thus, while last year there was a total of 452 standard elementary schools not parts of accedited high schools, this session there are 566 such schools.

Emphasis upon better elementary schools is one of the most hopeful signs of general educational development within the state. To encourage the standardization of elementary schools located apart from the regularly accredited high schools, the state board of education makes an annual appropriation, in addition to regular state funds, of $150 to the local board for each standard one-room school accepted at this rating.

THE ROSENWALD SCHOOLS

A statement has recently been issued showing that, in the past ten years, the Julius Rosenwald Fund, in cooperation with fourteen southern states, has aided in the building of 2,512 rural schools for negroes.

The cost of these schools was $10,111,000 provided as follows: By public fund, about $5,460,000; by negroes, $2,290,000; by whites, $500,000, and by the Julius Rosenwald Fund, $1,860,000. For the past year the Rosenwald Fund made an appropriation covering aid toward building 517 more schools and adding 55 rooms to schools now in use, as requested by the cooperating states.

The number of schools erected in each state and their total cost are:

State	Schools	Total Cost
Alabama	292	$ 627,411
Arkansas	137	571,736
Florida	17	145,030
Georgia	114	405,510
Kentucky	95	411,949
Louisiana	242	798,526
Maryland	51	271,840
Mississippi	298	1,301,993
North Carolina	432	1,845,458
Oklahoma	60	292,766
South Carolina	190	1,149,902
Tennessee	201	866,316
Texas	175	613,527
Virginia	208	809,388
Total	2,512	$10,111,352

The schools have a teacher capacity of 6,240 and a pupil capacity of 280,800. They are required to be of standard construction, representing the most approved modern educational ideas regarding site, placing of windows, ventilation and sanitation. Each is equipped with one or more industrial rooms, and each has a minimum requirement of two acres of ground. The larger schools represent the consolidation of several smaller districts, the pupils being transported in school wagons. Construction and disbursement of funds are administered by state superindent of education. The buildings are public property.

—Despite the opinion of 387 principals that New York City classrooms can be ventilated properly by the use of doors and windows and the added evidence that costly mechanical plants in 147 schools are not in operation, the board of superintendents has decided that it sees no reason to recommend that the policy previously adopted of providing mechanical ventilation in school buildings should be abandoned.

In the report, 147 principals stated that the ventilating equipment in their schools was not being used, that in 196 other schools it was being used only a part of the time, and that in but 29 schools was it being used at all times. The ventilating experts declared that any defects in the service might be remedied by a little attention and that the mechanical ventilating system should be continued. It was maintained that in large schools where over 40 children are obliged to spend a large part of the day in a classroom, sufficient ventilation cannot be provided by the use of windows and doors alone, notwithstanding the testimony which had been received from the principals.

Among the claims made in favor of mechanical ventilation was that when the temperature outdoors is 40 or below, fuel cost is less with a mechanical system than without; that in schools having mechanical ventilation, the rate of promotion is 22 per cent higher than in schools without such equipment; and that a recent experiment where records were kept of respiratory illnesses, it was proven that better health resulted in schools using mechanical ventilation.

It was the belief of the school authorities that it is safer to rely on the results of scientific experiment rather than on the empirical knowledge of those who do not seem to think that forced ventilation is necessary in large, modern school buildings. Practically all of the large, modern, private commercial or business buildings where many people congregate, have to rely on forced ventilation.

—Gloversville, N. Y. Under a plan worked out by Supt. J. E. Warren and the principals' club of the city schools, final examinations for grades four to seven were given on June 8th, two weeks before the close of the school term. Under the plan, the teachers conducted their reviews after the examination period, instead of before as formerly, thus utilizing the final tests as teaching devices. Where a child failed in the examination, he was given an opportunity for another test. The plan is expected to show some advantages in a community where final examinations are the rule.

(Concluded on Page 128)

1168 Schools Now Equipped with G&G Telescopic Hoists

MORE and more schools over the entire country are solving their ash removal problems with G&G Telescopic Hoists, at the same time effecting remarkable economies in time, labor and operating costs.

This Model D Electric Hoist handles large quantities of ashes quickly and efficiently and uses very little current. Cans are hoisted direct from basement to ash truck, without rehandling at grade level. Sidewalk Doors and Spring Guard Gates insure perfect safety to operator and pedestrians.

There is a G&G Telescopic Hoist to fit the needs of your particular school, whether the volume of ashes is large or small. Ask your architect about G&G Equipment or write for our catalog which describes in full all G&G electric and manually operated Telescopic Hoists.

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Operating costs of Model D Electric Hoist illustrated:
Actual cost of current at this plant ····3 cts. per Kwh.
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Healthy Bodies Mean Active Minds

Schools everywhere know that healthy bodies mean active minds. For this reason every effort is being used to keep school children in better health and to prevent the spread of illness.

Rundle-Spence Vertico-Slant Sanitary Drinking Fountains are necessary because they provide pure, fresh, clean water at all times. In addition, they prevent the spread of contagion arising from germ-laden mouths. LIPS CAN'T TOUCH THE R-S NOZZLE and the source of most drinking contamination is automatically eliminated. Two of the more popular fountains for school use are pictured here.

R-S Fountains come in a complete range of sizes and models for every school requirement. Write for catalog which gives prices, specifications and full information on R-S Sanitary Drinking Fountains, Bath and Plumbing Fixtures and Supplies. It will be gladly sent upon request.

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C-92 Handsome vitreous china one piece fountain. Combines all the conveniences of the vertical stream fountain with the special slanting stream feature. Glass or cup may easily be filled from it.

C-147 A pedestal fixture of galvanized pipe with extra heavy vitreous china bowl and vertico-slant stream. An extra strong fountain for the playground.

(Concluded from Page 126)

—The cooperative system whereby pupils of the Haaren high school in New York City alternate weekly between school and regular business positions is reported to be highly successful as shown by the data regarding the 110 pupils recently graduated from the school.

At their request, the members of the graduating class did not go out to work until their last year of school. During the year from February, 1924, to February, 1925, the pupils not only completed their requirements for graduation with regents' examinations in the subjects required, but also earned a total of $20,819, the salaries ranging from $10 to $18 weekly.

The pupils were employed by fifty firms and practically all the pupils were retained at their work after graduation.

—South Pittsburg, Tenn. Acting upon the suggestions of the state education department, the members of the local school faculty have departed on an extended automobile trip, in place of spending the summer in special work at the University of Tennessee.

The faculty trip began with a visit to Washington and other eastern points, after which they will proceed westward to the Yellowstone. The party will return to the city in time for the opening of the fall term.

—At the direction of the board of education of Wilmington, Del., a ballot was prepared and submitted to the parents through the children, asking for an expression of preference as to the time schedule for the opening and closing of the schools. Those desiring the schools to open at 9:00 daylight saving time, corresponding to 8:00 standard time, were requested to answer yes on the ballot, and those opposed to opening the schools were requested to answer no. The result of the voting showed a majority of 17,353 votes in favor of opening the schools at 8:00 standard time or 9:00 o'clock daylight saving time.

—In Hancock County, W. Va., the probationary promotion plan will again be used under the same conditions as in former years. All pupils whose grades are not more than ten per cent below the passing mark will be promoted conditionally. A letter is regularly sent to the parent in explanation of the conditions.

—Supt. William McAndrew of Chicago, Ill., recently issued a special inter-school bulletin entitled, "Pleasing the Public". In the bulletin, Mr. McAndrew makes use of the idea of inviting comment as practiced in restaurants, railways and others public service organizations. It was urged that placards be posted in each school in such a way as to attract the attention of visitors. Again, it was urged that each principal advertise the fact that complainants will be given respectful hearing in the schools, and that no reprisal will be visited upon the complainant's child. A third means of publicity suggested is the use of a neat sign near the entrance to the building, giving the room number and floor of the principal's office. In the office of the principal, there should be a sign, giving the name of the principal, the assistant and the clerk.

—Fairport, N. Y., has completed a building program begun five years ago. In the past five years an elementary school has been erected at a cost of $75,000, the high school has been converted into a modern grammar school at a cost of $15,000, and a new 59-room high school erected at a cost of $345,000. Other improvements to the school system, together with the establishment of some new departments, have brought the total outlay close to half a million dollars.

—Alliance, O. Twenty-five and a half gallons of milk are used in the Alliance public schools each day. More than 300 children in the grades, most of them found to be underweight have been placed on the milk feeding program. Children in the first three grades are given half a pint of milk and a graham cracker each morning during recess. Older punils are given a pint of milk and a cracker.

The milk program has been in effect only a short time. Last year remarkable results were recorded as result of the feeding. Children were found to gain weight and to be more mentally alert when given the milk. The plan last year of giving milk during both the morning and afternoon recess periods was changed when the program was outlined this year. The afternoon milk was eliminated, and only children underweight were placed on the official program by the medical department. Where parents are able to pay, an assessment is levied for the milk. In the case of children from destitute families, money is provided from the Christmas seal sale fund.

—Portland, Ore. The city council has agreed to provide in the next year's budget an item of $8,000 for additional nurses and medical supervisors so that there may be one nurse to every 2,000 children in the city schools. Under a new plan, the city health department, the city schools and the Oregon Tuberculosis Society will cooperate in providing additional medical inspection in order that contagious diseases may be more quickly checked in the schools. Under the arrangement, the city is to contribute $8,000 and the schools $13,570 toward the enlargement of the medical inspection work.

—The Playground and Recreation Association of America has isssued its report for the year 1924, showing a total expenditure in American cities for public recreation, of $20,052,558, and a total of 8,115 play spaces in operation. A total of 4,444 play leaders are working without pay and 15,871 workers are regularly employed in play areas. A total of 711 cities have reported play areas, while new play areas opened for the first time in 1924 amounted to 635.

—Chicago, Ill. Business Manager John Byrnes has become dissatisfied with the progress of the ten-million-dollar building program and has taken steps to speed up the work. Contractors on school jobs will be asked to put on double shifts during the daylight saving season so that fourteen hours a day may be given to actual construction work. The architects' staff will be increased from eighty to one hundred members. Twenty buildings are now in course of construction, at a cost of nearly $10,000,000.

—New Haven, Conn. The school board has adopted a resolution providing that each new building erected in the future shall be so constructed that the roof may be used for open air classes.

"The responsible agents for the expenditure of large sums of school money, the superintendents, are entitled to a training in the fundamentals of business and financial administration sufficient to guarantee an efficient handling of these ever-growing public funds, and that the academic college degree is no assurance that the holder is adequately equipped for this task."—Dr. M. E. Haggerty, School of Education, University of Minnesota.

The DUNHAM
REG. TRADE MARK
HEATING SERVICE

Adequate heating for *every* classroom — *Dunham Heating*

THE rising generation may be a little different from any that have preceded it, but it differs not one whit when it comes to an appreciation for adequate heating of classrooms, corridors, halls, assembly rooms, etc. Dunham Heating provides a complete adequacy of warmth in all weathers—never too much or too little. Its installation conduces to greater efficiency in teaching, to better health of both teachers and pupils—and to the elimination of such factors as distracted attention from noisy radiators, expensive repairs, high cost operation, etc.

Every week sees additional names being added to the list of Dunhamized school buildings. Today there are several thousand Dunham installations giving adequate heating service to the schools of America.

Over sixty branch and local sales offices in the United States and Canada bring Dunham Heating Service as close to your office as your telephone. Consult your telephone directory for the address of our office in your city.

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THE PUPILS SAY: *"Since our school was Dunhamized everybody is happy. Now we have no more cold, drafty rooms, chilly corridors or noisy radiators. We're all for Dunham Heating!"*

THE NEW HIGH SCHOOL BUILDING FOR THE SCHOOL DISTRICT OF HAVERFORD TOWNSHIP

(Concluded from Page 59)

the class and dismissal bells, separate emergency fire gongs, exterior call bells, etc.

In the interior construction of the building the corridor is entirely surrounded by brick walls and heat and vent flues are in practically all cases of brick. Separating walls between classrooms are of brick or macite blocks. The auditorium and gymnasium are separated from the school portion by heavy brick walls, so that throughout the building all precautions have been taken to guard against fire and panic. In addition the entire first floor construction and all corridors throughout are of reinforced concrete and the entire basement and all toilet rooms have cement floors drained to floor drains for ease of cleaning.

The auditorium and gymnasium are only one story in height, balancing each other at either side of the fore court. The former is treated on the inside with a sand finished plaster, with plastered pilasters with tile caps. The proscenium arch to the stage is also treated with a tile decorative border, forming with the pilaster caps and the blue stage curtain the only color in the room. The woodwork is light gray in color, matching the seats.

The gymnasium has the walls lined their full height with a light buff colored brick with close joints, and a minimum of woodwork at the windows and other openings. The ceiling is open, with the iron trusses exposed so that gymnasium equipment may be attached to them. The entire exposed sheathing of the roof and the little woodwork along the walls is stained a soft dark brown. The same dark brown tone is carried out throughout the school portion with light toned and finished plastered walls, except in the basement, where the woodwork is painted gray. All classrooms have slate sills, so that flower pots and apparatus may be placed thereon without danger of spoiling the material and so that they may be easily washed off and cleaned, requiring no upkeep.

All toilets and shower enclosures are of black Pennsylvania slate to minimize expense in upkeep and offer more resistance to deterioration as well as to any danger of fire.

The entire exterior of the building is finished with a light gray-buff granite from a local quarry, with Indiana limestone columns and treatment at the main entrances and at the heads and sills of windows and at the parapet wall along the front of the main school portion. All exterior woodwork is finished a light gray in color, to tone with the limestone.

The roof over the auditorium and over the gymnasium is sloping and both are covered with a rough black wide Pennsylvania slate. The flat roof behind the parapet walls over the school portion is of slag.

The building cost about $265,000 or 26.5 cents per cubic foot.

THE VOCABULARY OF A HISTORY TEXT

(Concluded rom Page 65)

2. It is quite possible that special effort should be made to find out what these words are and devote certain periods of instruction to them.

3. In the 106 pages examined there were 2,912 different words which were used with a frequency of over 23,000 times, or an average of 121 different words per 1,000 running words.

4. More than fifty per cent of the words occurred but once and 90 per cent appeared less than ten times.

5. The authors of this text used practically all of Thorndike's first thousand words, about half of the second thousand, a third of the third thousand, a fifth of the fourth thousand, and one-fifth of the remaining five thousand. Only 327 words were found which did not occur in Thorndike's list—of these 248 were proper names. Grade history, therefore, seems to involve a greater proportional number of words in the first five thousand of the ten thousand most common words of (Thorndike's Word-Book). The vocabulary difficulty appears to be normal for the subject.

THE MARSHALL ELEMENTARY SCHOOL, JOLIET

(Concluded from Page 63)

As shown by the floor plans, the building has its main axis parallel to the street with lateral wings extending both right and left.

The first unit consists of twelve classrooms and a combination auditorium-gymnasium together with the necessary halls, offices, etc. The ultimate building plan permits of the extension of the wings so that a 24 to 30 room building may be produced.

The halls have brick wainscoting with block terrazzo floors. In case of any cracking, any block may be removed and a new one installed. The classrooms are provided with hardwood flooring over fireproof construction. This plan has been found to eliminate to a large degree all noise when pupils are passing and when movable furniture is uniformly used.

The auditorium-gymnasium is of light faced brick up to the ceiling. At one side is a stage; under the stage, there are mounted racks for the storage of the sectional opera seats. This provides a double usage for the space, and, in an elementary school, this gives ample opportunity for play and exercise, assembly hall purposes and recreational use for the community at times other than those when school is in session.

Heating and Ventilating

Heat is carried on by direct radiation, radiators being placed under each window unit.

SHOWN above is No. 611, two-part, with glass filler, a favorite Halsey Taylor school type. Made of heavy vitreous china with integral back and concealed hangers. Exclusively Halsey Taylor Automatic Stream Control!

A Variety of Designs

—another important feature

NEXT to the health-protecting features of Halsey Taylor Drinking Fountains, the most important feature is variety of designs. Schoolboard officials can choose Halsey Taylor Drinking Fountains with full assurance that appearance and utility have not been sacrificed for safety's sake. Two- or three-part types, individual, wall-types, pedestal types, models with glass-fillers—in short a type for any purpose. But all possess AUTOMATIC STREAM CONTROL and TWO-STREAM PROJECTOR, the features that make Halsey Taylor Drinking Fountains preferred in school installations. WRITE.

THE HALSEY W. TAYLOR COMPANY
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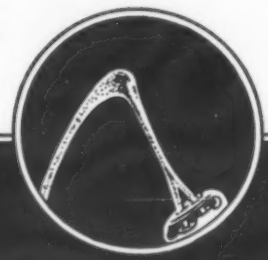

HALSEY TAYLOR Automatic Stream Control
DRINKING FOUNTAINS

One of the heating units controls the ventilation by means of electrically operated unit ventilators. The foul air is forced out through the halls and the top of the building, thus providing for a complete system of ventilation for each classroom as well as for halls and stairways.

Light

As stated before, there has been an effort to use the unit lighting both for natural and artificial lighting. To a large degree this has been carried out. The windows are of the Austral type which provide for tipping so that in the early spring and late fall each room may be ventilated without the use and expense of steam and the electrically driven Univent. These windows are so placed as to give light to the full length of the seated room.

The artificial lighting has been so placed as to have a uniform spread of light in all parts. The original idea called for unit lights for each sectional room unit. This has been slightly modified in building.

Building by Rooms

The first floor contains five classrooms, lavatories, a principal's office, and an auditorium-gymnasium. The second floor includes standard classrooms, teachers' rest room, a dining room and lavatories. Each floor is so constructed that the lateral halls, which can be extended in case additional units are added, provide two rear exits from the first floor and two fire escape exits from the second floor.

Each classroom is planned especially to accommodate movable furniture whereby the rooms may be cleared for different kinds of educational exercises. It has been found that the size hit upon for this purpose, namely about 22x26 feet, gives plenty of room both in the upper grades where there are larger seats and in the lower grades where sand tables and extra furniture must find place.

Incidentally, above the slate blackboard is an exit strip made of cork. This provides for permanent and special displays of the work of the schools without any interference with the service of the blackboard.

Cloak Rooms

Departing from the usual custom of late years, no inside cloak cabinets are installed. Instead, small cloak rooms with full ventilation were built. They are fully controlled from the inside of the classroom, having no exit directly to the halls. Whether this plan will prove more efficient than the cabinet type remains to be determined. It is slightly more costly, but better ventilated and less crowding occurs.

The extreme length of the building is about 155 feet. The width of the main part is about 61 feet with an extension in the rear for part of the auditorium-gymnasium of about 34 feet.

Cost

The total cost of the building included contracts for the building in general, heating, plumbing and lighting fixtures and architects' fees is about $194,000. The following itemized statement of contracts shows the distribution:

Building contract—Fitzgerald Construction Co., Chicago, Illinois	$132,275.00
Heating contract—L. J. Wilhelmi, Joliet, Illinois	24,690.00
Plumbing contract—L. A. Williamson & Co., Joliet, Illinois	17,300.00
Lighting contract—Berger Electrical Co., Joliet, Illinois	6,866.50
Lighting fixtures—Berger Electrical Co., Joliet, Illinois	1,775.70
Architects' fees	10,867.89

Although the building is a strictly fireproof construction project, it is equipped with a standard fire alarm system and extinguishers. A system of electrically controlled clocks completes the outlay.

NEW CENTER SCHOOL AT MORRIS, ILL.

(Concluded from Page 62)

The total cubic contents of the building is 892,140 feet and the total cost including architect's fees and everything except equipment is $226,663 or 25.3 cents per cubic foot, a low figure, for fireproof construction. The architect was Mr. Arthur L. Pillsbury of Bloomington, and the general contract was let to Mr. C. J. Newlin of that city.

—Jackson, Mich. Plans have been made for securing the validation of the $2,500,000 school bond issue.

—The U. S. Bureau of Education has issued a report showing the growth of consolidated schools. There are 168,000 one-teacher schools, enrolling 4,750,000 children; two, three and four-teacher schools, enrolling approximately 1,500,000 children; schools in villages of 500 and under, enrolling approximately 2,250,000 children; consolidated schools, enrolling 2,750,000 children, and 750,000 rural children enrolled in schools of larger towns and in others not included in the classification. There are about 150,000 teachers employed in 14,000 consolidated schools of the country.

—Owing to a serious crowding, Supt. E. Everett Cortright, at Bridgeport, Conn., has urged the board of education to proceed immediately with the construction of a new high school.

—The grounds of the new Lincoln consolidated school near Ypsilanti, Mich., were graded, seeded, and supplied with shrubs and bushes by a group of 68 farmers, free of charge. Drives were laid out and graveled, and the stone foundation of the old school removed. The men spent three days at the job, and each noon the women of the district served dinner in the school dining room.

In commenting upon a fire which broke out in the local high school, the Danville, Va., News said: "A school is more than a building. A very good building may be a poor schoolhouse. And no building should house large numbers of school children which is not provided with every known device for their safety."

Investigate! *Investigate thoroughly!*

The more thorough the better. That will show why we have equipped, and are equipping the finest schools with

THE NATIONAL SYSTEM
AUTOMATIC TEMPERATURE CONTROL

No repairs in 14 years . . . . no trouble in 17 years . . . . everything satisfactory for 18 years . . . . Such reports from installations are what convince School Boards, Architects and Engineers, because freedom from expense *after* installation is an important matter.

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Offices in Principal Cities

As many names of important installations as you wish, on application.

THE WORK OF THE SCHOOL JANITOR

(Continued from Page 48)

brush, 8 minutes, 15 seconds. The time required in each case favors use of the vacuum though more tests ought to be made before a final conclusion is drawn.

The Cleaning of Special Rooms, Corridors and Stairs: In general, the advantages of the central vacuum cleaner for classrooms apply likewise to such special rooms as gymnasium, play courts, auditoriums, cafeterias, clay modeling rooms, kindergartens, libraries, etc., these advantages being somewhat less where there is but little furniture but being extremely important in nearly all cases. In the case of manual training and domestic science rooms, however, it is often advisable and sometimes necessary to use the brush. In such rooms there are often pieces of wood, matches, pins, etc., which act as obstructions in the vacuum tool and cause annoyance to the operator.

In cleaning corridors the vacuum accomplishes better results than the brush, but there is probably little difference in the time required. The brush is wider than the vacuum tool and will, therefore, cover more space at each stroke. Also, the vacuum tool must be moved more slowly than the brush, both because it is attached to the hose and because it will not clean the floor so well if moved too rapidly. On the other hand, the vacuum will clean at both forward and backward strokes while the brush can clean in one direction only, and if skilfully operated, there is no need for covering space twice with the vacuum tool, while with the brush each stroke must begin a few inches back of the place where the previous stroke ended and must slightly overlap the space swept by the stroke immediately preceeding.

For the cleaning of stairs, the vacuum cleaner has a distinct advantage. It will remove dirt from the corners where each step joins its riser and the stair wall, which is very difficult to remove with a brush.

We may, therefore, conclude that the vacuum cleaner is at least as rapid and more thorough in the cleaning of special rooms, corridors and stairs.

Kinds of Vacuum Equipment: The use made of a vacuum cleaner for daily cleaning of floors will depend largely upon what kind of a vacuum cleaning system is installed. In the two schools observed in which vacuums were installed more than twelve years ago, they were used very little for cleaning floors, while in the two schools in which vacuums had been recently installed, both were used for the cleaning of nearly all floors. The difference in the amount of use was due: first, to the fact that the new installations had an inlet valve located near the door of each classroom, one valve serving one, two, three or four rooms, while in the old installations one or two inlet valves had to serve an entire floor; second, the old installations necessitated use of a 75 foot hose, while a 40 foot hose served the newer installations.

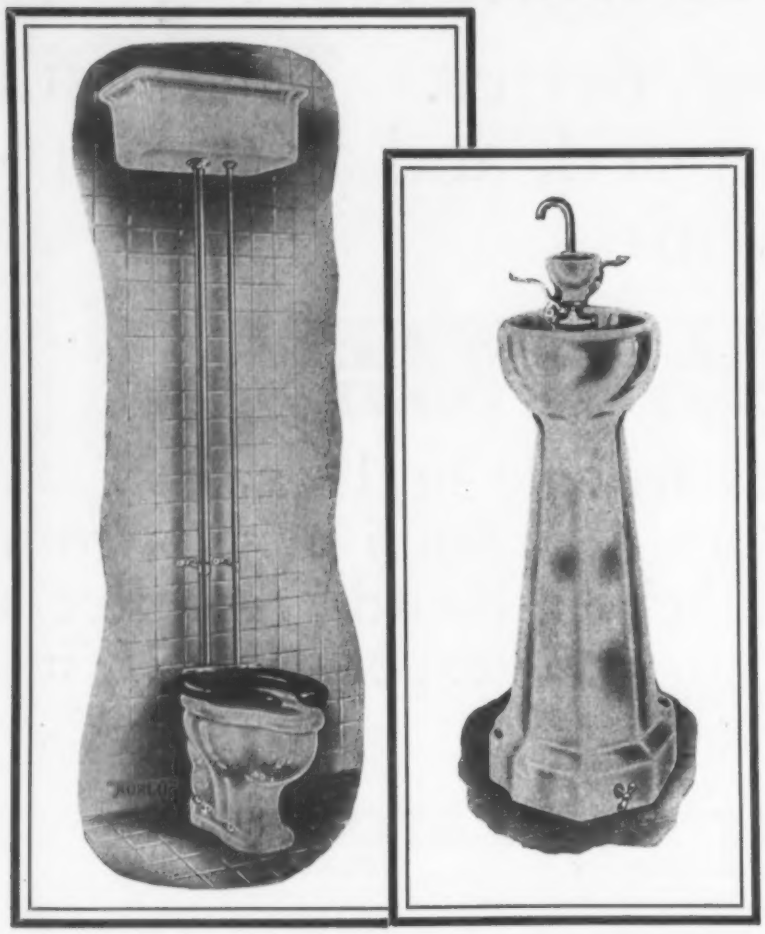
It makes a great deal of difference in the time and energy required to clean a room, whether a long hose must be dragged from room to room or a short one may be detached from the inlet valve and re-attached to another after the cleaning of every two or three rooms. With the long hose, the greater friction also reduces the effectiveness of the work. In the schools where the janitors did not use their vacuums, these were the sole reasons given for not using them.

Janitors who have never used the vacuum or those familiar only with installations necessitating use of a long hose often express the opinion that the work is laborious and that they would rather use a brush. This is not the case where a short hose is used. In one of the schools a janitor 65 years of age was operating the vacuum. He had cleaned floors by means of brushes for twenty years and when a vacuum was installed in his school he feared that he would be unable to operate it. The use of the vacuum was required and he has now successfully operated it for three years. He now maintains that use of the vacuum is less fatiguing than use of the brush. He says that he would have to give up his work if it were not for the vacuum.

Other Advantages of the Central Vacuum Cleaning System:

1. Use of the central vacuum cleaner eliminates the portion of dust on furniture and woodwork caused by sweeping, since it takes all dust directly to the basement.
2. The vacuum itself is sometimes used to dust the tops of desks and ledges on woodwork.
3. Use of the vacuum keeps the floor cleaner and, in the case of unoiled floors, will reduce the frequency requirement for scrubbing and mopping.
4. Use of the vacuum reduces the frequency requirement for washing windows, since it does not stir up dust.
5. The expulsion of dust from the classroom directly to the basement where it may be burned, is the best way of disposing of harmful bacteria that cling to dust particles.
6. The use of the vacuum cleaner eliminates any possible objection to cleaning vacant special rooms and corridors during school hours.
7. The central vacuum cleaner makes it possible to clean rooms in which teachers or a few pupils remain after school hours, without raising dust for them to breathe.
8. Erasers and chalk trays may be cleaned far more rapidly and thoroughly with a vacuum cleaner than by hand.
9. Walls and ceilings may be dusted more rapidly and thoroughly with a vacuum cleaner than with a wall brush.
10. Rugs, carpets, door mats, brushes of all kinds, dusters, etc., may be cleaned more

KONCO THE NAME TO LOOK FOR ON PLUMBING WARE KONCO



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The KONCO trade mark is a worth-while emblem to look for. Representing, as it does, the utmost in quality, durability, satisfactory service and value, it is your protection—an absolute assurance of the best the market affords in the line of plumbing fixtures for schools.

KONCO experts are "always at your service," and will be pleased to offer suggestions on any and all your plumbing problems. No obligation.

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PIONEER MANUFACTURERS OF PLUMBING FIXTURES FOR SCHOOLS

thoroughly and more rapidly by means of a vacuum cleaner than by any other means.

11. A central vacuum cleaner is handy as a means of removal of dirt bound to accumulate in a furnace room, and by means of an attachment it can be used to remove dust from the furnace tubes, thus through better and more frequent cleaning, saving almost enough coal to pay for operating the vacuum.[2]

Cost of Central Vacuum Cleaning Systems: President Skillman of the Spencer Turbine Company estimates that the average cost of installation, complete, for a one-janitor plant is $1,500 and for a two-janitor plant, $2,000. He estimates that the plan will give service on the average for twenty years. The total cost, including depreciation, interest on investment at 6 per cent, electricity, and replacement of hose, tools, etc., he estimates to be $285 per year for a one-janitor plant and $460 per year for a two-janitor plant.

When one considers the enormous advantages of the central vacuum cleaner, its effectiveness and ease of operation, besides the many other uses that may be made of it, this yearly cost seems very reasonable. For the ordinary elementary school this equipment is, from the standpoint of cost, entirely practical. The guarantee that every classroom will be kept thoroughly clean, not to mention the saving of the over-worked janitor's time and energy or the other uses to which the vacuum may be put, should be worth from $20 to $30 per room to any elementary school with as many as eight or ten rooms or more. Efficiency of service in cleaning floors is the first consideration, economy of time and ease of performance follow. In these respects the central vacuum cleaning system stands high. However, it will probably be some time before all elementary schools are thus equipped. A consideration of floor brushes is, therefore, next in order.

Kinds of Floor Brushes to Use: The floor brush containing long, thickly packed hairs is most satisfactory for wooden floors. For cement floors one containing short, thickly packed hairs is best. In practice janitors often use brushes, of which the hair has been worn short, to sweep cement floors.

The length of block of the brush is important. Thirty-eight of 48 janitors observed used brushes having an 18-inch block. However, experiments show that the 18-inch block is not always advantageous. In sweeping classrooms containing large desks, the brush having an 18-inch block may be used to advantage. In sweeping rooms containing small desks the 18-inch block is at a disadvantage both as regards quality of results secured and time required for performance. The brush having a 16-inch block is better for this purpose. In sweeping corridors, however, the brush having an 18-inch block is superior to the brush having a 30-inch or a 36-inch block. Work with the brush having the shorter block is not quite so rapid as with the one having the longer block but the latter will leave more brush marks and will lose some sweeping compound and dust back of it.

Care of Brushes: Proper care should be given to brushes because a brush well cared for will accomplish better work than one poorly kept. Brushes should be hung on pegs when not in use rather than set in corners so that the hairs may become bent. Good brushes have holes on either side of the block into which the handle may be screwed. The handle should occasionally be changed so that the brush will wear evenly on both sides. The hair of the brush should be combed frequently with a coarse comb to keep the brush free from lint and oily, gummy dirt that clings to the hairs and bunches them together. Good brushes, properly cared for, will give longer and more efficient service than brushes poorly kept. A "bald" brush or one of which the hairs are bent or bunched together, will not accomplish satisfactory results.

[2]See estimates by Cooley, M. S., "Vacuum Cleaning Systems in Schools," The American School Board Journal, Vol. 18, pp. 27-29, September, 1918.

FLOOR LOADS IN THE DESIGN OF SCHOOL BUILDINGS

(Concluded from Page 60)

The average load permitted for assembly room is 99.5 and for corridors it is 92.5. The Committee writes as follows concerning school buildings:

"According to investigations by Norman M. Stineman (American Architect, April 11th, 1923) a standard classroom has 736 square feet area and accommodates 45 pupils. The average weight of furniture and inmates is about 7,500 pounds, or ten pounds per square foot. He estimates the maximum possible load as two adults in each seat and 30 around walls, giving a total live load of 28 pounds per square foot.

"In the course of loading tests for schoolhouse floors made by the Milwaukee Board of Education (Engineering News-Record, May 6th, 1920) a room 24 feet 5 inches by 32 feet (781.3 square feet), normally for the accommodation of a teacher and 48 pupils, was crowded with 258 pupils, filling all seats double, and all aisles and open spaces. There resulted a total weight per square foot, including desks, of 41.7 pounds.

"Under normal conditions with 48 pupils at an average weight of 115.6 pounds, plus weight of desks and teachers, the average floor load was 10.83 pounds per square foot. Filled under normal conditions with adults, as in the case of night school, the load amounted to 12.9 pounds per square foot.

"Other investigators put the live load in school classrooms normally filled at fourteen pounds per square foot, and at 22 pounds if the aisles are crowded."

WHALE-BONE-ITE

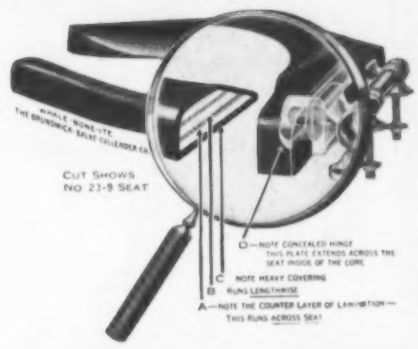
TOILET SEATS are the standard of sanitary service. That means they fulfill without question the purpose intended. Pleasing appearance, urine proof.

Easiest cleaned, and last but not least—they stand the gaff of playful and willful youth.

This seat because of its material assists in defeating the spreading of health destroying diseases common in material that absorbs moisture, etc.

Types to fit all regular closets, both hand and seat operating.

Ask your Plumber, Jobber, or Seat Department of the makers.



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ON SELECTING SCHOOL SUPERINTENDENTS

(Continued from Page 38)

plete statement, but the case should not be prejudiced in favor of the $5,000 man. When the man on the lower salary is the younger, or when he is in the smaller city, or the one poorer in purse, then he may be the better man. Other factors are the length of service of each as city school superintendent, the degrees that each may have, their relative families, and, as hitherto said, the kind of service each is prepared by nature and training to render. Men of the first type in general get the lowest salaries as city school superintendent. If in this hypothetical case, the two men are of the same age, with similar families, and in charge of cities of about the same size and wealth, it may be presumed, wanting other evidence, that the first man is not one absorbed in pedagogics but with a broad outlook on life, and he may be for this reason the exact man required.

As to testimonials, when the copies offered have been from the hands of honest men, they are worth something. References by mail and by wire and by telephone are worth much more. Far better is the investigation on the spot by a committee of the board going to see both the school authorities and various other citizens. Board members making such investigations should go about separately and freely; they may discover interesting facts. One of the most amusing instances was that of a board that thirty years ago investigated a man who was not only school head but also the owner of a dry goods store and the author of several books. In its search for the real facts, the board was told by a rich man of the city that the candidate did not know enough to write books and made but a pitiful sum, scarcely five thousand dollars a year from the dry goods store, and that the grand niece of this man was the school head's secretary in the public office. Thirty years have passed; the young lady of that time is still board secretary in that city; and the board that discovered the affairs of this schoolman and elected him, the entire board, is dead. But the rich man still lives at a great age, and has never yet understood why his remark became the cause of the election elsewhere at once.

Selecting a good school chief is a problem in human nature. Not a state in the Union attempts to control the salaries of the city school chiefs; yet many boards still say that they cannot afford to pay higher salaries than at present, when not a man on the board has ever stopped to think what the word "afford" means. A good school superintendent often by a few suggestions, without wronging a living person, save in annual expense the small sum that means to him the difference between a living salary and a painful one on modern prices, or the difference between staying on and tearing up the family from its home and its roots and trying once more to find the opportunity to render the public and especially the youth of the public a true and great service.

Board members understand in business affairs that neighboring states often differ far more than states wide apart. In education, a city in the south of a state may be much more like a city in its extreme north than like the city that is just across the state line. Near-by cities may, therefore, be fifty years remote from each other in educational development. A specific illustration may serve: Massachusetts has a school development that differs more from its neighbors than it differs from California. It is often said by those who know little of the matter that all American public schools are alike; they are alike in the same sense that all horses are alike, and all automobiles. It does not follow, however, that the schoolman who has made a success in Indiana will not make a greater success in Ohio or Iowa, greatly as the school laws differ. The records of our cities show that taking men from other states has often been the necessary means to waking up into new life the best school forces. But boards doing this should do it with their eyes open, getting men likewise ready to go forward.

THE STANDARDIZATION AND DISTRIBUTION OF SUPPLIES AND EQUIPMENT AT ROCHESTER, NEW YORK

(Continued from Page 41)

been most successful. The principal is not now obliged to make monthly requisitions for supplies. This means time saved. The clerk does not now spend hours counting out papers, etc., for each teacher and for *renters*. The supplies being delivered to each room helps to solve the problem of storage space for the general supplies for the entire school. The *quantity* of supplies being standardized has solved for me what has always been a most perplexing question 'How much ought I to order?'"

From another departmental school (foreign) of 58 rooms with a registration of 1400 pupils—"During the summer the opinion was expressed by Professor Engelhardt of Columbia University, that the proper way to determine the quantity of supplies as well as items to be dropped or added was through a questionnaire to the teachers. You will recall that this questionnaire not only asked the teachers' opinion as to proper quantities per pupil per term but also asked for suggestions as to supplies now furnished which ought to be added to list. The teachers also expressed opinions as to items which they considered unnecessary.

"After obtaining the teachers' judgment as to proper quantities of supplies and proper equipment our committee, through an unusually

Smith's IMPROVED PANIC EXIT LOCKS

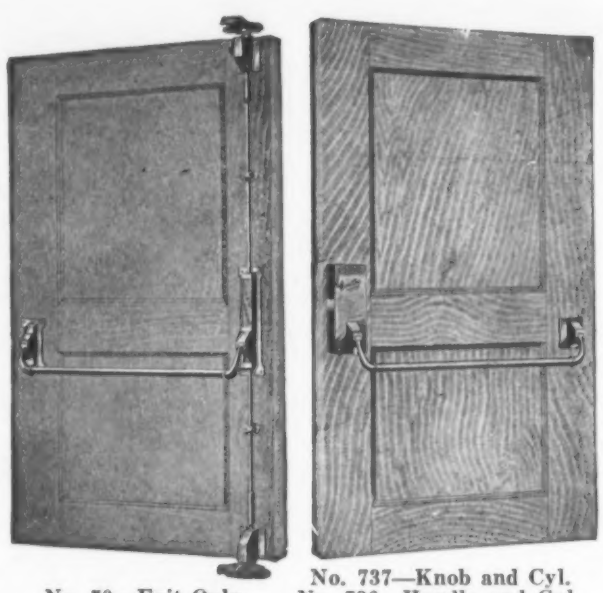
Smith's Improved Exit Locks Are the Best Locks Made for Schools, Theatres, and Industrial Plants

The GRAVITY Principle

Our Gravity Exit Lock is the most perfect Mechanical Expression of the Exit Lock Idea that has ever been developed. It is the Exit Lock with Two Locks and without a single Spring in either Lock.

The LEVER Principle

It is the Exit Lock with Lever Action at the Cross-bar to open the Door. There is No Spring Action and no Spring Tension. It is the One Exit Lock of Unfailing Operation, built on Everlasting Principles for Everlasting Service.



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SCHOOL BOARDS use them because they give the protection wanted.

ARCHITECTS specify them because they have become the acknowledged standard.

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capable subcommittee arrived at the final figures.

"Our method of delivery has many advantages, among which are:

"a. By making two deliveries during the term the quantities are sufficiently small so that they may be stored within the teacher's room.

"b. The necessity for issuing supplies from the school store room to individual teachers is eliminated. With proper storeroom methods, even if we had proper store room facilities, the old system would have demanded a full time

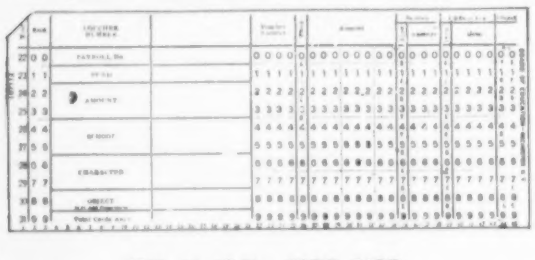


FIG. 11 (S-8). CODE CARD.

stock keeper in this building to do the work properly. This, of course, we never had.

"Most elementary schools, and this is certainly true of this school, do not have building store room facilities for handling such quantities of supplies as come in. This is especially true in the matter of arranging individual items so as to be readily accessible. For example in our building we have at least seven small store rooms, some of them at least one block distant from the secretary's office.

"I firmly believe that we are working along the correct lines and that the plan gives every promise of success."

From a grammar school (American) 23 rooms, with a registration of 859 pupils—"From a business and economic standpoint:

"Greater accuracy is required on the part of those handling supplies at the warehouse.

"The work is done more efficiently. More definite information is given through the charts for grades, which shows very plainly the allotment for each pupil in each grade.

"Teachers have supplies on hand at beginning of term and thereafter when needed.

"The plan saves sending in requisitions.

"Work is no longer hampered by delay in deliveries.

"Teachers know just how much they have on hand, what is required to carry on the work and, therefore, plan more economically.

"It saves time and labor on the part of principal.

"Doesn't have to make out long lists of requisitions for each grade. Supplies are sent directly to classrooms. There is no checking of parcels and contents, now done by the individual teacher.

"An inventory of supplies on the part of principal or assistant is no longer necessary."

CUTTING PRINTING COSTS IN SCHOOL MANAGEMENT

(Concluded from Page 42)

paper than was necessary, but the little extra expense was so overwhelmingly overbalanced by the saving in presswork, that this was easily absorbed. An interesting side light to this, is that the estimator would not believe that he had not made a blunder in the estimate until he had checked and re-checked several times. This way of doing printing was a new one on him!

I would strongly recommend the school executive who reads these pages and who is conscious that his printing bill is too high, to try this method, for it will most assuredly pay him, and will release money for other purposes.

THE BASIS OF PHYSICAL COMFORT IN RELATION TO AIR TEMPERATURE

(Continued from Page 44)

room. With this information he refers to his psychrometric chart on which the comfort line is drawn, and determines what the *equivalent* temperature is, and to what extent it varies above or below the ideal.

Take for example 70° dry bulb and 60° wet bulb, we find on referring to the chart that we are about one degree above the comfort line, and we must either raise the temperature or the humidity if we wish to maintain the ideal.

The only difficulty with the situation as it stands at the present time, is that the maximum comfort line and the equivalent temperature lines which parallel it at spaces of one degree (not shown on the chart), necessitates the introduction of new names and new values which the average person, although he be interested in the subject, is reluctant to adopt. It requires time and some study to become familiar with the new values and their immediate adoption is, therefore, much delayed; furthermore, the average person is not provided with a psychrometer and a psychrometric chart, neither is he skilled in their use.

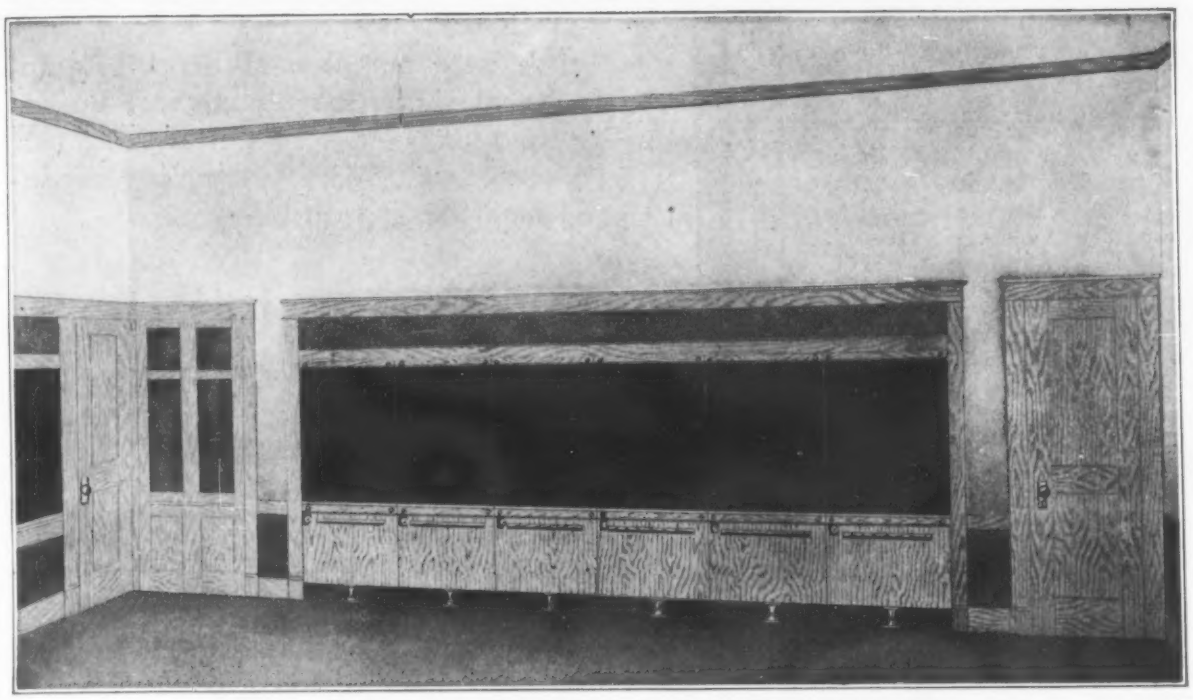
A simplified practical application of the equivalent temperature data is for this reason highly desirable. Means should be provided whereby the everyday observer can utilize this valuable information without the use of charts or intricate scientific instruments.

This is entirely feasible and a simple instrument has been developed by which the equivalent temperature can be determined without the aid of calculations or charts. It is known as the *comfort thermometer.*

Let us refer once more to the psychrometric chart (see Illustration 2) with the comfort line

(Concluded on Page 143)

OPEN IT IN A SECOND — —



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MILLER SCHOOL WARDROBE

Above is an actual Photograph. There are many advantages in the Miller School Wardrobe; we mention the following:

Genuine Bangor Slate Blackboard — *No Petty Pilfering*
Solid Bronze Hardware — *Reduction of Heating Expense*
Perfect Ventilation and Sanitation — *Nothing to Get Out of Order*

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For Complete Information Write for Catalogue W-5

(Concluded from Page 140)

thereon. If we look at the line of maximum comfort, we note that it passes through the saturation curve at 64°. Following this line downward across the chart, note that it intersects the 80% relative humidity curve at 66°. Down further on the chart, say for example where the comfort line crosses 50% relative humidity, the dry bulb is 69½° and the wet bulb 58°. From the foregoing it is evident that there is a certain dry bulb temperature for every wet bulb to give the maximum of comfort.

We speak of this desirable dry bulb as the

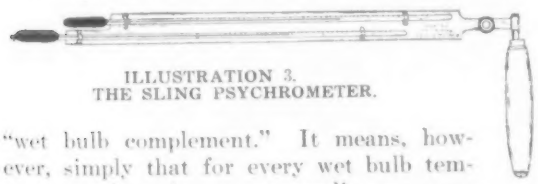

ILLUSTRATION 3.
THE SLING PSYCHROMETER.

"wet bulb complement." It means, however, simply that for every wet bulb temperature there is a corresponding or complementary dry bulb temperature that gives the maximum degree of comfort. It is apparent, therefore, that if we take the wet bulb thermometer and provide an additional scale on the stem which gives the desirable dry bulb temperature for any given wet bulb, we have an instrument that answers all purposes, so far as its practical application is concerned in everyday use. Such an instrument is shown in Illustration 4.

Between the temperatures on the stem of 65° and 75° wet bulb, the corresponding temperatures of maximum comfort dry bulb are also shown. A small dry bulb thermometer is also attached to the instrument for convenience.

In using the instrument, the wick covering the bulb is wetted with clean water and the instrument swung for a minute or so in the air by means of the pivoted handle provided for this purpose. It is swung or rotated until the wet bulb reaches the lowest point on the scale

ILLUSTRATION 4.

and remains stationary. The scale on the right of the mercury column gives the wet bulb reading. Directly opposite, at the left of the mercury column on the red scale, the desirable dry bulb is found for this wet bulb. The small thermometer gives the dry bulb temperature of the air being tested.

The black scale on the wet bulb instrument gives the wet bulb temperature and the red scale shows what the dry bulb temperature *should be*.

It is only necessary now to correct the room temperature as indicated, to obtain maximum conditions of health and comfort.

The comfort thermometer in the hands of those charged with the control of temperature conditions in schools, solves many perplexing problems and controversies regarding classroom temperatures and paves the way for better health and greater comfort for both teachers and pupils.

This is a step of great importance in the application of recent scientific discoveries in ventilation. All experimental work in recent years has emphasized the importance of maintaining the correct air temperature. Classroom temperatures have been almost invariably maintained at too high a point, with no recognition given to their relationship with the humidity and air motion in the room.

Maintaining the correct temperature and the proper relationship to the moisture content is the most important single factor in schoolroom ventilation. It probably means some changes in standard equipment. Automatic controlling devices which hold the room temperature at a given point and which cannot be adjusted or interfered with by the teacher will give place to easily adjustable thermostats which the teacher will regulate in accordance with a predetermined comfort scale.

Following this modification in temperature control practice will doubtless come another in a direction diametrically opposite to that usually prophesied. The old standard of thirty cubic feet of air per pupil per minute has so far weathered the storm of repeated attacks from experimental physiologists and hygienists, but it must soon succomb as the air quantity basis for ventilation practice is a thing of the past. When the readjustment is finally made and our standards properly based on *air conditions* rather than on ventilation methods, I am sure we will find that the quantity of air to maintain desirable standards will be much increased rather than reduced. This, however, is another story which we will discuss in a subsequent issue of the AMERICAN SCHOOL BOARD JOURNAL.

THE MAINTENANCE OF SCHOOL BUILDINGS

(Continued from Page 47)

by the educational department. Nevertheless, a few principles may be set down to guide one whose duty it is to pass judgment on the question. They are:

1. A building should be abandoned at once when it is unsafe, or when the health and morals

Keep The Water Out Of Your Walls

YOU MAY NOT KNOW what is going on in your brick and stone walls. Wet spots, ruined decorations and efflorescent salts are annoying in themselves, but the chances are these are simply indications of damage going on which will require extensive repairs.

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Leaks may be permanently cured by the use of **THE CAFFALL PROCESS**—the heat method—which "Saved Cleopatra's Needle."

All work done by skilled men under contract and a ten year guarantee given.

THE OBELISK WATERPROOFING COMPANY
One Madison Ave. New York

The above shows how water, through frost and salt action, can damage joints. All bricks, after the first, were removed by hand.

"Tax Exempt"

A wise purchase of School Equipment should not tax School Boards and taxpayers for renewal and repair expenses. When you equip your institutions with

Natural Slate

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Toilet and Shower Partitions, Blackboards, etc.

you have solved this problem for good. Absolutely non-absorbent, it offers no lodging to germs, stains or impurities of any kind. And the first is the last cost.

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of the children are seriously threatened by its continued occupation.

2. It should be abandoned when the maintenance and added costs of operation are sufficient to offset maintenance and interest charges on a new building of equal capacity and utility.

3. It should be abandoned when it is inconvenient from the point of view of accessibility, as when the residence section has moved away.

4. It should be abandoned when manifestly unsuited to modern school needs and too far depreciated physically to warrant alterations and additions.

As soon as a building is abandoned for general school purposes, it is usually wise to dispose of it. Better sell it for what it will bring than let it stand idle. No obligation is felt to keep such structures in repair, and they become a prey to vandalism as well as to the elements. Dangers from fire are great. Although no depreciation rates are at hand for untenanted schoolhouses, it is safe to say they are one and a half the normal rates. Also, if the buildings are standing, there is a temptation to use them for some school purpose no matter how decrepit and obsolete they are. It is not at all an uncommon sight to see disciplinary cases and defectives housed in old buildings long rejected for general school purposes.

The sales value of abandoned buildings goes down very rapidly with each passing year. This means the district should realize what it can as soon as possible. Old, worn-out schoolhouses should be sold only under agreement to wreck them at once. Structures abandoned for other reasons than obsolescence or decrepitude, may be sold with the understanding that they will be moved from the lot, or the school might move a sound building to a new and suitable location. There seems to be a growing idea that the land itself should not be disposed of, but retained for playground and park purposes. This, of course, is dependent upon so many local factors that a general conclusion that such action is advisable is unwarranted. The conclusion that buildings must not be allowed to stand idle is a sound one.

As a final point, it may be said that several European countries give far more attention to the maintenance of public buildings than we do. In France, for example, the architect who plans a building also assumes responsibility for its care. He has the duty of seeing that it is properly maintained and plans renewals and alterations with as great care as he exercises in planning the original construction. There is a great lesson for us to learn in this respect in order that the public investment may be conserved and the efficiency of the school plant kept at a high degree of efficiency. If this principle of continuous responsibility is accepted, it will not be long until we have evolved satisfactory methods and means for putting it into practice.

SCHOOL JANITORIAL AND ENGINEERING SERVICE—VI

(Continued from Page 54)

each cabinet in which the chamois skin and cleaning cloths are kept. The various pails and dust boxes are stood on the floor of the cabinet.

Following is the schedule showing the number of tools that are furnished for different sizes of school buildings:

JANITORIAL TOOL ALLOTMENT SCHEDULE

Janitorial Tools	Elementary Schools: One Man	Two Men	Three Men	Four Men	Junior and Senior High Schools
Basket, Bamboo, 4 bu.	1	1	2	2	One for every two janitors or fraction thereof
Box, Galvanized Iron Dust	1	2	3	4	One for every janitor
Box, Mop	1	1	1	1	One for every floor
Broom, Corn	2	2	3	4	One for every janitor
Brush, Counter	1	2	3	4	One for every janitor
Brush, Floor, 14"	1	1	1	1	None
Brush, Floor, 16"	1	1	2	3	One for every janitor
Brush, Hopper	1	2	3	4	One for every janitor
Brush, Radiator	1	2	3	4	One for every janitor
Brush, Sanitary Closet	1	2	3	4	One for every janitor
Brush, Combing	1	2	3	4	One for every janitor
Cabinet, Tool	1	2	3	4	One for every janitor
Chamois Skin	1	2	3	4	One for every janitor
Cloth, Cleaning	2lb	4lb	6lb	8lb	Two pounds for every janitor
Cup, Force (Plumber's Friend)	1	2	3	4	One for every janitor
Dusters, Sanitary	1	2	3	4	One for every janitor
Duster, Special	1	2	3	4	One for every janitor
Holder, Mophead (Sweeping & Scrubbing)	3	4	5	6	One for every janitor plus one for every floor
Holder, Mophead (Hall)	2	2	2	2	One for every floor and one for each gymnasium
Kit, Handy Tool	1	2	3	4	One for every janitor
Mopheads, Sweeping	8	14	20	26	Six for every janitor
Mopheads, Hall and Scrubbing	19	19	19	19	Fifteen for every hall mop, plus five for every gymnasium plus two for every floor
Pails, Galvanized Iron, 14 qt.	2	2	3	4	One for every janitor
Pails, Wringer	2	2	2	2	Four for a junior and five for a senior high school
Pans, Galvanized Iron Dust	1	2	3	4	One for every janitor
Scraper, Glass	1	2	3	4	One for every janitor
Scraper, Floor or Wood	1	1	1	1	Two for a school

Note: Any employee who has routine cleaning work to do regardless of his position, is considered a janitor for purposes of allotting the cleaning tools.

Get the Best!

Now is the time to place your orders for your School Supplies for the 1925-26 School year.

You want to buy the best but you also want to create economies. To do this is very hard but:

Many Schools, Colleges, Cities and Counties all over the country have found that they can get what they want, when they want it, and at considerable saving; by consulting

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SCHOOL and SANITARY SUPPLIES—SOAPS—DISINFECTANTS
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"You Can Too"

PRINCIPLE AND PRINCIPAL

"The most successful supervision is that which makes leaders of the teachers along lines of thought and experiment. This is the nature of any strong movement, that it carries with it the enthusiastic group that will not only follow the new lead, but will make new discoveries and find new paths to success. That is the most successful leadership which leads others to worth-while action.

"The best form for principal-leadership would seem to be the working out of policies through the initiative of teacher groups. Those groups that have homogeneous interests or like needs for classroom procedure are the best for organized action, the most practical for the work of supervision."

These two paragraphs are found in the introductory to a report issued by the Chicago Principals' Club.

In stating the problem as applied to the administrative duties of the school principal the report holds that "the solution of the problem depends to a great extent upon the ability of the principal to apply to the administration of his school the general principles of executive efficiency. He must have:

(a) An appreciation of time and values.

(b) The habit of working methodically, systematically and accurately.

(c) A mastery of the details of administration, but the strength to refuse to be "swamped" by detail.

(d) The ability to grasp situations and problems quickly; to make decisions promptly and to act judiciously.

(e) The power to work through others and to refrain from doing the things that someone else can do just as well.

Placing of Duties

The report then turns its attention to the subject of programming his work and deciding in which of two groups his various duties fall:

(a) Duties that cannot be delegated to other people.

(b) Duties that may be assigned to others.

A. Duties That Cannot Be Delegated

1. Planning the organization of the school.
2. Assigning new pupils whose grading is in doubt.
3. Classifying and disposing of the "individual" case, e.g., the unfit child.
4. Arranging schedules or programs that concern several divisions of the entire school, e.g., programs for industrial arts or other departmental exchange; schedules for gymnasium instructor, practice student, or bath attendant, for hall and playground supervision.
5. Deciding in regard to compulsory cases or special cases for the truant officer; applications for labor certificates or for relief from the Children's Aid.
6. Discipline cases referred by teachers.
7. Conferences with patrons in person or by telephone.
8. Efficiency ratings of teachers and substitutes.
9. The budget.
10. Final selection of books, educational material, and equipment.
11. Matters relating to Parent-Teacher Associations.
12. Conferences with the visiting teacher on special matters of social service.
13. Consultations concerning school plant.

B. Duties That May Be Delegated

(Assuming that the principal has at least a part-time office assistant.)

1. Answering telephone.
2. Enrolling pupils and taking care of register or registration cards.
3. Cataloging and filing reports, records, and bulletins.
4. Writing of transfers, labor certificates, truant officers' lists, compulsory petitions, aid cards, application to County Agent.
5. Making out of regular reports to the central office, e.g., payrolls, attendance summaries, fire-drill reports, bathroom and playground reports, receiving forms.
6. Writing of requisitions for supplies and equipment.
7. Checking up and distributing supplies.
8. Circulating supplementary reading, maps, globes, and other equipment.
9. Arranging assembly programs, seating of assembly hall, placing of school exhibits.
10. Caring for pupils before school and during intermission in playground, playrooms, and corridors.
11. Supervision of monitors and Safety Patrol, and settlement of minor cases of discipline in which they are concerned.

At times and under certain circumstances it may not be possible to delegate above duties. Adjustment rests with the individual principal.

4. **Office Assistance:**

(a) A competent office assistant, known in Chicago as extra teacher or clerk.

(b) A Visiting Teacher or Vocational Adviser, if available.

(c) Older pupils who may be trained to assist before school and during intermissions. They can file, duplicate, care for stock room, check and fill requisitions for supplies, attend to "routing" and return of equipment.

5. **Office Equipment.** The office should be thoroughly equipped with all necessary facilities for efficient work, e.g., adequate and convenient storeroom, a satisfactory filing case, typewriter duplicating machine, bulletin board or pigeon-hole case, good type-forms and blanks. A messenger buzzer and telephone connection with the engineer are essential.

6. Plans and Devices that Make for Efficient Administration.

A. Concerning Teachers

1. Concise and definite instructions concerning matters of school organization and management should be worked out by the principal, duplicated, and distributed to the teachers early in the term. These might cover: general information regarding the keeping of records and making out of reports; method of reporting on non-attendance and tardiness of pupils; time and system of reporting to truant officer, health officer, and nurse; making out report cards to parents; corridor and playground supervision; ordering of supplies and equipment; general matters of discipline.

2. Regular use should be made of the bulletin board or post-box so that teachers and recitations need not be disturbed by the circulation of bulletins.

It is a good plan to have two bulletin boards, one for permanent bulletins, e.g., schedules for yard supervision, or semester lists of assembly songs; the other for new announcements to be noted daily.

3. Principals should have stated periods open to teachers for consultation regarding pupil cases or other school matters.

4. Typed or printed lists of all available equipment and the location of the latter should

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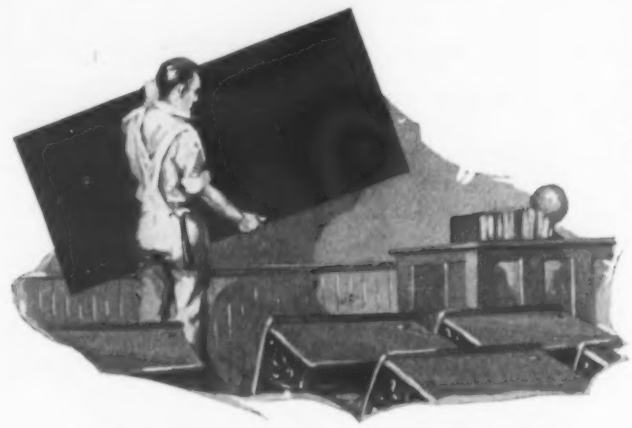

One Man Handles a Panel Easily

Beaver Blackboards are manufactured in handy, light weight slabs a full quarter of an inch thick and in standard blackboard widths of 3, 3½ and 4 ft., and in lengths of from 6 to 16 ft. respectively. One workman can easily handle the application with a saving of considerable time and labor.

Beaver Black Board is built upon a uniform five ply base of genuine Beaver Wall Board and made into light, handy panels two or three times the size of the largest slate blackboards obtainable. One workman can readily install it without muss or litter, over any kind of a wall—stone, brick, plaster, rough boards or studding—with equally good results. It is easy to cut and work, with a saving of considerable labor and time. And once up the sturdy panels cannot crack, chip or fall and will stand constant use years longer than most writing surfaces.

Beaver Black Boards incorporate all the necessary requisites of a correct writing surface. A surface that will not pit, chip or grow gray with age and easily cleaned with a sponge and water. Investigate the merits of Beaver Black Board before you purchase again.

FREE Samples and Folders

The new folder "Better Blackboards" will help considerably in solving your Blackboard problems. It gives in detail the advantages of Beaver Blackboards. Ask for your free copy and samples for comparison. Both gladly sent without obligation on your part.

THE BEAVER PRODUCTS CO., INC.

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TWO COLORS ~ BLACK AND GREEN

be placed in the hands of each teacher early in the term.

One principal has compiled for his school a very complete indexed finding catalog, a sample of which may be seen in the office of the Principals' Clubrooms.

5. There should be stated times and a definite system for receiving requisitions and distributing supplies and equipment. For instance, one school reports as follows:

"We keep a spindle on which the teachers place their requests for supplies from the storeroom on Friday. The supply girls (from eighth grade) deliver the supplies on Monday before school or during recess.

"We keep another spindle on which the teachers put their information for the truant officer.

"We keep a wire basket for teachers' reports or notes to the principal."

B. Concerning Parents and Pupils

1. Aim to establish regular office hours.
2. Have stated times for interviews with pupils.
3. If possible, make appointments when parents are requested to call for conferences.
4. Train the clerk to interview callers and give them such information and help as lies in her power. Many cases may thus be disposed of without referring to the principal.
5. Interview callers courteously, but without allowing them to monopolize your time.
6. Save the writing of too many letters by the use of standard or type-forms.

C. General Suggestions

1. Have a good bell-signal system.
2. Have a work-organizer for the principal and one for the clerk.
3. Have typed directions tacked to the telephone, instructing the one who answers the call to take down the name and telephone number of the caller and not to send for the principal except in cases of special emergency.
4. Keep a calendar pad on which to note engagements or emergency items.
5. Work out a simple filing system and then see that the files are kept in order.
6. Institute and then maintain order and system in the stock room. Train pupils to assist.
7. Have a printed form for the ordering and charging of supplies.
8. "Route" slides, victrola, museum cases, etc., in care of pupil monitor.
9. Duplicate bulletins to teachers and letters to parents.
10. Use printed or duplicated type-forms as much as possible, e.g.:

THE CLASSROOM TEACHER AND REFORM

"Only as classroom teachers themselves take the lead will essential reforms in teaching and school administration be brought about. There are two tendencies with regard to the place of the teacher. Under one theory the teacher is supposed to be only a 'cogwheel,' the brains being centralized in the administration; under the other teachers are trusted to learn for themselves and teaching is a fine art.

Two Ways to Use Expert Service

"There are two ways of using expert service in the schools. One is to lay down certain routine that teachers must follow—a good deal like making a list of Tilden's strokes and then trying to teach people to plan tennis by telling them to do these strokes exactly in the order in which Tilden did them. This is the aristocratic way of using experts. The democratic method is to have the experts teach the teachers how to make the whole education job the best possible.

"There are objectors to letting the teachers take the lead. Some say 'teachers can not be trusted.' This is the whole question of democracy. The only way to have teachers who can be trusted is to give them a chance to be trusted. A still better answer is that it is very doubtful indeed whether teaching can be mechanized. We must build up such a responsibility on the part of teachers that they will make education the finest thing it possibly can become, because they will know what they are doing, they will know alike the philosophy and the science of education, they will know children.

"Similarly with certain administrative problems with which we are faced. We have become more or less centralized in school administration, with resulting formalization of instruction. We have unwise and dishonest expenditure of public funds and as a result we have devised red tape that makes it impossible for people in the school system to move. We also have political control and exploitation. The only way to get rid of this is for the teachers themselves to take it in hand. When the classroom teachers make up their minds that there shall not be graft and politics in the school system these will vanish.

Can Work for Democracy

"In both of these essential reforms—betterment of the teacher-pupil relationship that is at the root of the problem of better education, and better administration of schools—we as teachers have a chance to take the lead to make the kind of education that means democracy."—**Wm. H. Kilpatrick, New York.**

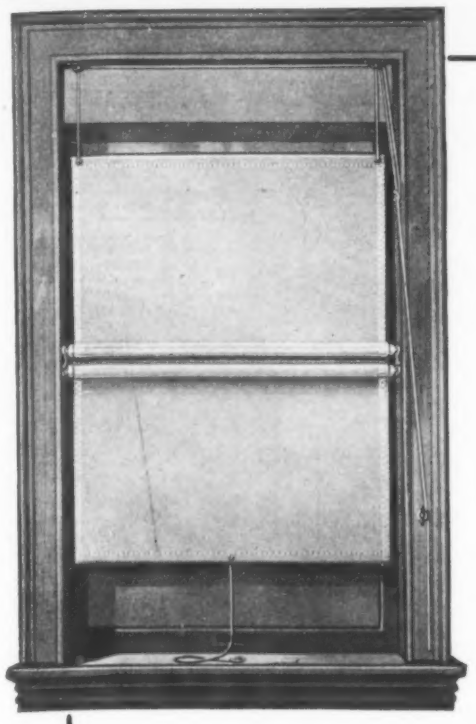
Negro Education in North Carolina

—In negro education, as in many other matters, North Carolina is reckoned the most progressive state in the South. Education for everyone regardless of creed or color is the cornerstone of the new program in North Carolina.

At present North Carolina spends $4,000,000 for negro education—a sum greater than the state expenditure for the entire educational program, white and colored, in any year prior to 1910. There has been a 1,500 per cent increase in the amount spent for negro education in the last eleven years. The expenditure for this purpose during the last four years was $15,000,000, and the next quadrennium will witness a larger expenditure.

Rosenwald schools, partly financed by Julius Rosenwald of Chicago, have indicated the progress in better school accommodations. There are 433 Rosenwald schools now in use in the state, and two experts give their entire time to new projects throughout the state. Of $1,842,288 expended in the erection of Rosenwald schools, $323,936 were contributed by the Chicago philanthropist, $363,318 were raised by the negro people, $51,745 were contributed by white people, and $1,103,289 were provided from public school funds.

The high schools have increased from 13 in 1921 to 34 at the present time, of which twelve are public high schools. Plans are now being carried out for the conversion of one of the private schools into a four-year standard state teachers' college for negroes.



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It gives a correct and scientific diffusion of light and permits window ventilation.

It is easy to adjust and cannot get out of order—is strong and durable—good looking and well made.

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For school shades our special woven tan colored canvas is recommended.

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They Increase the Efficiency and Improve the Health of Teachers and Pupils.

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Users of double roll shades are cautioned against infringements and imitations, as the AIRANLITE Patented Double Roll Shade is fully protected by U. S. Patents.

Be sure you get AIRANLITE Double Roll Shades mounted on AIRANLITE Patented Brackets.

NEW BOOKS

Purposive Writing and Speaking

By Jos. A. Wallace and Jas. M. O'Neill. Cloth, 12mo., 338 pages. Price, $1.56. Longmans Green & Co., New York.

Teachers who have been dissatisfied with the formality of the older books on English composition should hail this book with joy. It is revolutionary in its arrangement, method, and content, but none the less complete, technically accurate, and entirely suited to even the most formal college preparatory course.

The book proceeds on the theory that students can best learn to use English as a tool in everyday life by using it in school for purposes and under conditions which approximate real life situations. Words, sentences, punctuation, grammar, figures of speech, etc., are the tools and tool processes which must be mastered so completely that the student handles them automatically and unconsciously.

Part one of the book consists of 28 projects in the use of English from the simplest reporting of an incident and the writing of a simple letter to such advanced undertakings as the dramatizing of a story, the writing of an essay, and the preparation of an after dinner speech. Each project is described and discussed, and is to be developed by means of one or more groups of actual projects or exercises.

The balance between written and oral work seems to be carefully kept—a shortcoming of most high school work, which is likely to emphasize written exercises too strongly.

Part two contains "the tools"—the technical facts of the English language and its correct use. The treatment is brief, accurate, and amply complete for high schools.

The appendix contains details of parliamentary law, use of the library, subjects for debate, versification, etc.

The book appeals to us as most practical for any high school and especially for classes of boys. Some of the assignments and topics for speeches and debates too strongly emphasize problems of professional and personal interest to teachers and should be replaced with live topics taken from business, professions, literature, etc.

Occupational Therapy

Louis J. Haas. Cloth, 8 vo., 409 pages. Price, $6, net. The Bruce Publishing Co., Milwaukee, Wis.

Occupational therapy came into popular prominence during the recent war as a result of the remarkable work of human reclamation carried on in the military and naval hospitals of the several leading nations. The work had been introduced in general and special hospitals several decades before the war, but the results had been of interest only to professional workers.

In the present book one of the American pioneers in occupational therapy offers the results of his long experience in handling male patients suffering from nervous and mental ailments. The book divides itself, naturally, into two major divisions: Part one takes up the problem of treating patients by means of curative occupations; part two describes the several crafts which can be employed and shows in detail the modifications in processes, materials, design, and finishes which he and other workers have developed.

The author makes no pretensions of discussing the medical or psychological problems involved in diagnosing or prescribing for patients; these matters belong entirely to the doctor in charge of each case. He does define the functions of the therapist in carrying out the doctor's prescriptions, in progressively treating the patient that the prescription is effective, and in keeping the doctor informed of the progress of other changes which seem to warrant a modification of the prescription. The body of the book shows how the department of therapy is to be organized and conducted, and how each of the crafts is to be carried on. The crafts included are surprisingly varied, ranging from basketry and raffia work to brush making, chair caning, art metal work and jewelry, art enameling, concrete work, tennis racquet stringing, woodwork, smithing, weaving, book binding and printing, etc.

Many of the methods and modifications in the use of tools and materials are original and most suggestive even for the normal craft worker. For the general hospital therapist the chapters describing craft methods and bedside occupations are especially useful.

Teaching English in High Schools

By Russell A. Sharp. Cloth, 163 pages. Price, $1.20. Houghton Mifflin Co., New York.

A carefully considered statement of the objectives of English teaching and of the problems of outlining courses of study and developing classroom methods of teaching composition and literature.

Recreative Athletics

Prepared by the Playground and Recreation Association of America. Paper, 126 pages. Price, 60 cents. A . S. Barnes & Co., New York.

This is a practical handbook on track and field meets, tests of physical fitness, winter sports, water sports, and the organization and administration of athletics, games, and sports. It will be found useful wherever a condensed guide and rule book are needed.

Paths to Success

By Harold G. Black. Cloth, 313 pages. Price, $1.40. D. C. Heath & Co., New York.

Sixteen essays on the several subjects commonly included in secondary education, each by a prominent specialist in his field and each a plea for the especial need and advantage of his subject in a complete education. The editor who writes the introductory paper on the general problem of the aim and trend of modern education cannot conceal his regret at the exceeding practicality of our present-day courses and of the almost complete neglect of the training of the emotions and of the will, of the neglect of "unsound morality, and pure religion". It is a pity he does not argue the point to a conclusion.

The Hale Literary Readers—Book One

By Edward E. Hale. Cloth, 244 pages. Price, 60 cents. Illustrated. World Book Co., Yonkers-on-Hudson, N. Y.

It has become the fashion in recent years to make readers serve various educational aims of remote practical and social types. The present book sets forth no involved theory and claims no remote objectives—it is a literary reader that aims to give children a glimpse of the best in the treasury of British and American writings. The selections of both prose and verse have been entirely chosen to attract and interest and to create a love for genuine literature by familiarity with some of the best work of the best writers. Each selection is preceded by a sketch of the author's life.

Use the Replacement Inkwell That Needs Less Replacing

Every year more school systems are adopting the U. S. Inkwell as standard for all replacements. Superintendents tell us that they have never seen anything like it for durability.

U. S. Inkwells can pass the most rigid examination. Check over the answers to these important questions:

1. **Is it easy to install?**
   Yes, just drive in three tacks.
2. **Will it fit our desks?**
   Yes, it fits desks of any size.
3. **Is it quiet?**
   Yes, the lid does not rattle nor creak.
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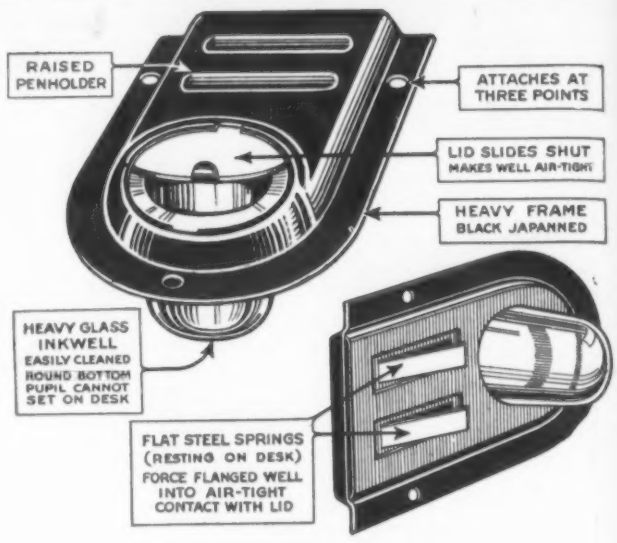

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Educational Crossword Puzzle Book

By R. K. Speer and J. R. McGaughy. Paper, 53 pages. Price, 52 cents. World Book Co., Yonkers, N. Y.

The Thorndike list of ten thousand most commonly used words is the basis of this entertaining book. The 25 puzzles range from the easiest to an extremely difficult interlocked six letter "demon." The keys are sensible, contain no misleading or ambiguous statements, and are carefully graded.

Source Book of American History

By Albert Bushnell Hart. Cloth, 443 pages. The Macmillan Co., New York City.

This volume made its first appearance in 1899 and has been widely used in schools and colleges. The present edition differs from the original in that two chapters have been added to bring it up-to-date and to reflect the important historic events which occurred since 1900. Chapter XXII tells of the progress of peace during the first eighteen years of the present century, and Chapter XXIII is devoted entirely to the World War and its outcome.

Primer of Graphics and Statistics for Teachers

By Harold Rugg. Cloth, 12mo. Price, $1.60. Houghton Mifflin Co., Boston, Mass.

Many teachers have had the mistaken notion that the preparation of educational statistics necessitates wide mathematical knowledge and special abilities. The present little book will correct that notion. It takes the mystery out of the preparation of the most commonly used tables and graphs and explains in most simple language the common statistical nomenclature which applies to educational work. The author makes splendid use of actual tabulations of test and measurement results for his illustrations.

Memory Selections

By Edward Stitt. Cloth, 12mo. 295 pages. Hinds, Hayden & Eldredge, New York.

The use of memory selections in oral language, the choice of selections, and improved aims and methods of teaching selections—constitute the subject-matter of this carefully written book.

The Constitution at a Glance

By Henry D. Hazard and Margaret D. Moore. Chart. Price, 75 cents. Published by Henry B. Hazard, Lock Box 1919, Washington, D. C.

This chart shows in detail the general provisions of the constitution and the bill of rights; the legislative functions, the judicial powers, the executive powers, the relations of the federal government and the states. Distinctive colors and faces of type throw the several main heads and the original language of the constitution into bold relief. The title of the chart justifies itself.

The Expert Dictator

By Conrad J. Saphier and Thomas J. Smyth. Cloth, 386 pages. Price, $2. Isaac Pitman & Sons, New York City.

This book is a departure from the accustomed make-up of dictation books used in high schools and business schools. It consists of a series of brief lessons illustrating the principles of Pitmanic shorthand. Each lesson includes a brief explanation of the fundamentals to be studied, a list of word signs and phrases, word drills, and a series of three to ten dictation exercises made up of letters and literary selections from present day economic literature. This is intended to test the student's understanding of principles illustrated, and typical standards of practice in letter writing, office practice, filing, language and grammar are appended.

The book affords a wide variety of useful selections which the teacher may use in regular class work to supplement the dictation practice and the regular work taken from the textbook. The book is published with the usual care of the Pitman Press and includes a complete reference vocabulary.

Great Rivers of the World

By W. S. Dakin. Cloth, 8vo, illustrated; 204 pages. The Macmillan Co., New York, N. Y.

This book answers two questions concerning each of the great rivers of the earth: What has been and is the relation of this river to the life of the peoples inhabiting its water sheds? What other river has had similar effects on its valley dwellers? These questions involve the fundamental aims of geographic study as related to a leading physical feature of the earth surface. The book fully meets its opportunities. The eleven great river systems are taken up to show their service to man—physically, economically, politically. The illustrations are complete.

Laboratory Studies in Educational Psychology

By Egbert M. Turner and George H. Betts. Cloth, 218 pages. D. Appleton & Co., New York.

Recreative Athletics

Prepared by the Playground and Recreation Association of America. Revised Edition. Paper, 127 pages. Published by A. S. Barnes & Co., New York.

Plane and Solid Geometry

By Arthur Schultze, Frank L. Sevenoak, and Elmer Schuyler. Cloth, 480 pages. The Macmillan Co., New York City.

A thorough revision of a book which has been popular since 1901.

Health for Every Day

By Maurice A. Bigelow and Jean Broadhurst. Cloth, 247 pages, illustrated. Published by Silver, Burdett & Co., Chicago and New York.

Personal health through work and play, rest and sleep; food, water and air; care of skin and clothing; cleanliness and bathing; avoidance of drugs, and self-control. Whether self-control can be taught on the basis of the health motive raises an interesting teaching question.

Beginnings in Educational Measurement

By Edward A. Lincoln. 151 pages. J. B. Lippincott Co., Philadelphia, Pa.

The publication of this book is due to the apparent lack of informative material in educational measurement for teaching purposes. There appeared a distinct need for material in simple form for outside study, leaving the class period free for illustrative material, administration of tests and scales, and discussion of problems suggested from classroom experience.

The book does not attempt any detailed analysis, comparison and evaluation of tests but seeks largely to illustrate and demonstrate, to provoke and lead discussion, and to aid in the solution of special problems. Among the topics covered are subject-matter tests, mathematics of measurement, use of tests, measurement of intelligence and of character, and selection and use of tests by the teacher. A rather complete index offers lesson plans, supplementary methods, and a final examination in educational measurement.

Kenilworth

By Sir Walter Scott; 160 pages. Price, 65 cents. Longmans, Green & Co., New York City.

This text belongs to the new Longmans series of class books on English literature. It is provided with an introduction and copious notes on the subject. The abridgment of the text shows exceptional skill in holding literary values.

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PUBLICATIONS

The Authors' Book. Notes for the guidance of authors in dealing with publishers. The Macmillan Co., New York, N. Y. This booklet is a new and revised edition of a little book previously published under the title of Notes for the Guidance of Authors and it offers suggestions on the preparation of manuscripts, on the reading of proofs, and on dealing with publishers.

Conservation of Intelligence in Illinois High Schools. By Charles W. Odell. Bulletin No. 22, 1925. Price, thirty cents. Issued by the Bureau of Educational Research of the University of Illinois, Urbana. In this bulletin are presented the results of a comprehensive inquiry relating to the intelligence, educational plans and vocational intentions of high school seniors in Illinois. The pamphlet takes up the topics of intentions of seniors relative to higher education, vocational choices, differences among seniors of the state, and a study of the data collected for use in this publication.

Educational Tests for Use in High Schools, Revised. By Charles W. Odell. Educational Research Circular No. 34, 1925, issued by the University of Illinois, Urbana. The pamphlet discusses the prognostic tests valuable for high school use, opportunity for diagnosis of students with reference to achievement, purpose and scope of the tests, and offers a list of selective tests for use in high schools.

The Planning of Teaching. By Walter S. Monroe. Bureau of Research Circular No. 31, October, 1924, of the University of Illinois, Urbana. Until a teacher has become familiar with the teaching of a subject he should prepare a somewhat detailed lesson plan. This pamphlet outlines the immediate objectives in terms of student achievements, the aspects of lesson planning, and gives typical illustrations of lesson plans.

Uses of Intelligence and Achievement Tests in 215 Cities. By W. S. Deffenbaugh. City School Circular No. 20, March, 1925. Issued by the Bureau of Education. In the tabulation the classification of extensive or slight use of tests has been disregarded; thus the data in the tables show whether the tests are used at all for the purposes listed. The purposes for which the tests are used are ranked, beginning with the purpose for which the test is most used.

Results Obtained with the Dick Test Before and After Immunization with the Toxin of Scarlet Fever. By R. E. Dyer, Surgeon, United States Public Health Service. Public Health Report for March 27, 1925.

Methods of Reporting the College Teacher's Load and Administrative Efficiency. Bulletin No. 10, March, 1925. Issued by the Colorado Teachers' College, Greeley, Colo. The bulletin aims to throw some light upon the adequacy of the present methods of determining and regulating the teacher's load in the college. Two blanks were used, one the "teacher's daily schedule," and the other the "total weekly load." From the results, it is evident that the teaching load as this is given in the daily schedule, cannot be used as an accurate gauge of the amount of time which individual teachers and groups of teachers devote to their regular school work. There are four features of the teacher's work which the record should show, i.e., the amount and difficultness of the work, its excellence or quality, and the degree of responsibility connected with it.

PERSONAL NEWS OF SUPERINTENDENTS

—Supt. R. O. Smith of Maryville, Tenn., has been reelected for a third term.

—Paul R. Spencer, of St. Cloud, Minn., has been elected superintendent of schools at Superior, Wis. Mr. Spencer enters upon his duties August first.

—Supt. S. A. Frampton of Bellefontaine, Ohio, has been reelected for a three-year term.

—Supt. W. A. Mowry of Taunton, Mass., has been reelected for the next year.

—Supt. Ernest T. Jackson of Carrollton, Mo., has been reelected as head of the schools, at a salary of $2,800.

—Mr. E. W. Powers of Fairbury, Ill., has been elected superintendent of schools at Watseka.

—Mr. Berlin W. Tinker, retiring superintendent of schools at Waterbury, Conn., was the guest of honor recently when hundreds of school patrons and friends assembled at a banquet to show their appreciation of his splendid achievements. Mr. Tinker was presented with a check as a practical token of the esteem in which he is held by the teaching staff. Mayor F. P. Guilfoile portrayed the efficient manner in which Mr. Tinker had guided the destinies of the school system over a score of years. Dr. J. F. Hayes, Dr. J. D. Freney and Dr. A. A. Crane spoke for the school boards of the past and Dr. M. A. O'Hara and Mrs. Alleta B. Deming, members of the present board, paid glowing tributes to the guest. Mr. and Mrs. Tinker plan to make a visit to Palestine.

—Dr. Michael C. Donovan, formerly principal of the Crosby high school, has been elected to succeed Dr. Tinker as superintendent of schools.

—Supt. James A. Nugent of Jersey City, Dr. L. L. Jackson, assistant commissioner of education in charge of secondary education, and Supt. T. J. Sickles of New Brunswick have been named as members of the New Jersey State Council of Education.

—Supt. A. W. Moore of Oelwein, Ia., has been reelected for another year.

—Supt. Homer D. Shepherd of Knoxville, Tenn., assumed his new duties on July first.

—Supt. Raymond O. Smith of Maryville, Tenn., has been reelected for a two-year term.

—Mr. I. F. King has announced his resignation as superintendent of schools at Coldwater, Mich.

—Supt. James R. Martin has been reelected as head of the schools of West Plains, Mo., for the next year.

—Mr. R. R. Jones, assistant superintendent and business manager of the schools at El Paso, Tex., has been relieved of his duties as business manager, and will devote his entire time to supervising the work of teachers.

—Mr. M. J. Brophy has been elected superintendent of schools at Gas City, Ind., succeeding N. J. Lasher.

—Mr. Ross Nichols has been elected superintendent of schools at Griggsville, Ill.

—Mr. Roger Burgess has been elected superintendent of schools at Childress, Tex.

—Mr. Rufus M. Hitch, for ten years district superintendent of schools of Chicago, Ill., died at his home in that city, following an attack of stomach trouble. Mr. Hitch was 73 years old. He entered the school system as a principal and achieved note as a strict disciplinarian.

—Mr. J. W. Asbury of Marion, Ill., has been elected superintendent of schools at East Chicago, Ind., to succeed E. N. Canine.

—Supt. E. F. Schweikart of Fremont, O., has been reelected for a two-year term at a salary of $4,000.

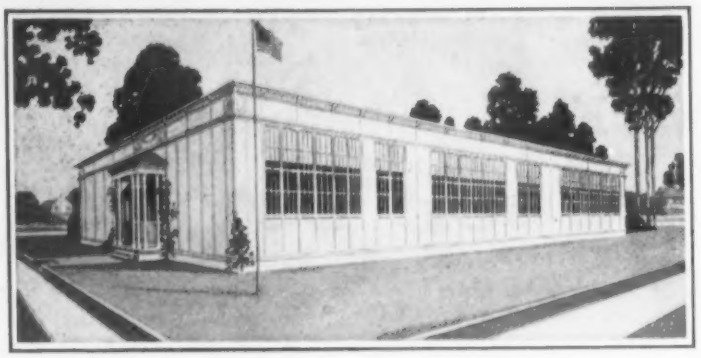
—The state board of education of Delaware has reelected Dr. H. V. Holloway as state superintendent of public instruction for the ensuing term.

—Supt. E. P. Simmons, of Elliott, Ia., will receive his master's degree from the University of Iowa this summer. He plans to work toward his master's degree the last part of the term.

Mr. Simmons took for the subject of his thesis, Common Words Giving Difficulty in the Beginning and End of the High School Period. The final volume of the study includes ten volumes of material, comprising more than 300 closely typewritten pages. In the final volume is given the rating on the Thorndike word list, the number of spellings, the number of errors and the percentage of accuracy in each of the 7,000 words. Many of the words had as high as 450 spellings, and none had less than thirty. The running words examined ran up to several million. The study covered two years' time and was carried out under the direction of Dr. Ernest Horn and Dr. Thomas Kirby of the University of Iowa.

—Mr. Marshall Johnston has been elected superintendent of schools at San Antonio, Tex., to succeed Jeremiah Rhodes.

—Supt. James R. Martin of West Plains, Mo., has been reelected for another year.



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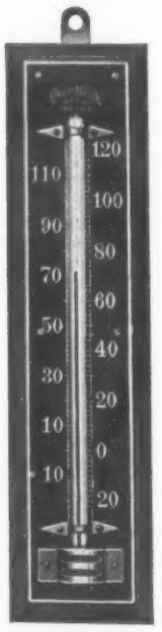

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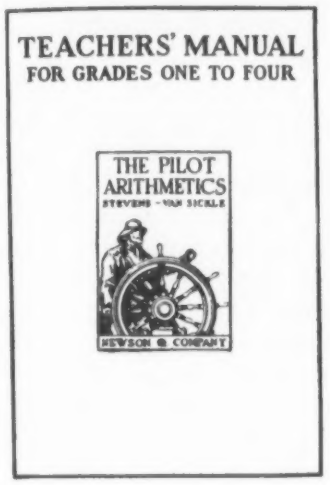

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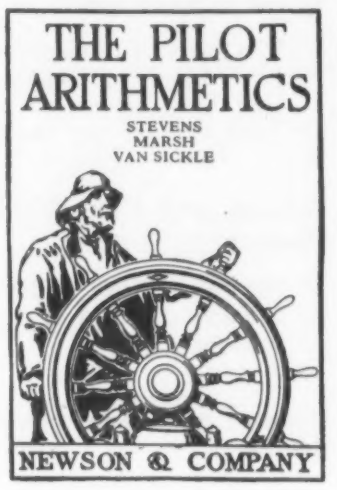

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PERSONAL NEWS

—Mr. J. A. Churchill, former state superintendent of Oregon, has been elected president of the State Normal School of Ashland, the term of office beginning on January 1, 1926.

—Mr. A. F. Waters, superintendent of schools of Georgetown, O., has resigned after 39 years of service in the schools of the state.

—Mr. Frank S. Tisdale, for 25 years superintendent of schools at Watertown, N. Y., has tendered his resignation, effective August 21st. Supt. Tisdale is retiring from the profession after completing 37 years of service as a teacher and superintendent.

—Dr. Henry S. West of Baltimore, Md., has presented his resignation to the board of school commissioners, to take effect August 31, 1925. Dr. West has had an experience of more than twenty-five years in educational work, including almost twenty years of service in the schools of Baltimore. In August, Dr. West completed five years as superintendent of schools, having been appointed to that office in the summer of 1920.

—Supt. David R. Rohrbach of Egg Harbor City, N. J., has been reelected for his sixteenth year, at an increased salary.

—Mr. W. G. Brooks of York, Neb., has been elected superintendent of schools at Burlington, Ia., to succeed E. M. Sipple. Mr. Brooks had signed a three-year contract with the York board, but was released from his contract to take the Burlington position.

—Mr. William English of Charleston, N. H., has been elected superintendent of schools at Lebanon.

—Supt. C. C. Sanborn of Farmington, N. H., and Supt. W. H. Buker of Rochester, will attend Columbia University this summer.

—Mr. J. H. Morgan has been elected superintendent of schools at Cisco, Okla., to succeed J. J. Godbey, who goes to Ardmore, to fill a similar position.

—Mr. Charles H. Keyes of Barrington, R. I., has been reelected for a seventh consecutive term, with an increase in salary.

—Mr. R. C. Shaw, of Westmoreland County, Pa., has been elected deputy state superintendent of schools for the State education Department. Mr. Shaw has been connected with the department of instruction since leaving Greensburg. He will make his headquarters at Harrisburg and will have as his duties the reorganization of the rural schools of the state.

—E. E. Ramsey, state high school inspector of Indiana, has been selected to fill a professorship in secondary education in the Indiana Normal School at Terre Haute. Mr. Ramsey has served three years as an inspector, coming to Indianapolis from Bloomington, where he had been superintendent for several years.

—Mr. Wm. W. Warner, head of the east side schools of Saginaw, Mich., for the last eight years, has announced his retirement. Mr. Warner had been connected with the east side schools for forty years as teacher, principal and superintendent.

—Miss Ethel Redfield, executive secretary of the Idaho State Board of Education, has been appointed as state commissioner of education, an office which had been vacant for the last two years due to the failure of the legislature to appropriate money for the salary.

Miss Redfield has been in educational work in Idaho for the past eighteen years. She served Nez Perce County as county superintendent, and was elected to the office of state superintendent, serving in that office for three terms. In August, of last year, she was elected as executive secretary of the state board.

—George E. McCord, former superintendent of schools at Springfield, O., has been elected head of the school system at Akron, to succeed Carroll R. Reed.

Mr. McCord is a graduate of Wittenberg College at Springfield and holds a B. A. degree. He began teaching in the Springfield high school and later went to Midland College, then in Atchison, Kans. In 1905 during the superintendency of Carey Boggess, he returned to Springfield. In 1914 Boggess suspecting McCord had designs on the office, refused to place him on the teaching staff. This brought on a controversy which resulted in the board's ordering the retention of McCord. His attempt to gain the superintendency was not successful until Boggess' contract expired in 1916. McCord's adherents on the board then elected him for a four-year term. Previous to his resignation from the office in December, 1924, Mr. McCord had served seven years as head of the schools, during which he engaged in a number of political controversies which divided the city into factional camps.

During his term as superintendent, Mr. McCord inaugurated the junior high school system, and put through a million-dollar building program. His retirement in 1924 came after a most bitter political fight in which he was not able to recover his lost strength among his teacher friends and other strong elements. Previous to appointment to his present position, Mr. McCord has been operating a drug store in Columbus, and conducting school architectural surveys.

—Mr. L. C. Holcomb, of Maryville, Mo., has been elected superintendent of schools at Winston for the next year.

—Miss Carrie Morgan has been elected assistant superintendent of schools at Appleton, Wis. Miss Morgan will act as purchasing agent of the schools, will attend to the secretarial duties of the superintendent's office, and will act as chief clerk and census taker.

—Supt. J. K. Berry of Smithville, Tex., has been reelected for a two-year term.

—Supt. W. H. Ryle of Holden, Mo., has been reelected as head of the schools for the next year.

—Supt. B. M. Sheridan, of Lawrence, Mass., in June, completed thirty years of service in the public schools, and 21 years as superintendent of the school system. Mr. Sheridan was given a banquet by the elementary teachers' association in honor of the occasion.

—Mr. P. P. Sullivan of Fontanelle, Ia., has accepted the superintendency of the consolidated school at Zion.

—Supt. O. A. Fleming of Freeport, Tex., has been reelected for the school year 1925-1926.

—Mr. J. C. Godbey has been elected state high school inspector for Missouri.

—Mr. O. V. Mongerson has been elected superintendent of schools at Chenoa, Ill., to succeed V. H. Barker, who goes to Lovington.

—Supt. S. O. Mase of Dover, Ohio, has been reelected for a four-year term.

—Supt. H. H. Helter of Mansfield, Ohio, has been reelected for a two-year period. Supt. Helter came to Mansfield from Wapakoneta eighteen years ago.

—Mr. J. H. Fleming has been elected superintendent of schools at Reidsville, N. C., to succeed P. H. Gwynn, Jr.

—Supt. C. A. Higley of New Lexington, Ohio, has been reelected for a two-year term, at an increase in salary.

—Supt. C. W. Conrad of Anna, Ill., has been unanimously reelected for the fourth consecutive term, at an increase in salary.

—Supt. Percival S. Barnes of East Hartford, Conn., has been reelected for a seventh term, at an increase in salary.

—Supt. L. R. Traylor of Ramsey, Ill., has been reelected for the fifth time, at an increase in salary.

—Supt. F. H. Krost of Coffeen, Ill., has been reelected for another year.

—Delbert Freeman of Fillmore, Ill., has been elected superintendent of schools at Farmersville.

—Supt. T. J. Sachse of Winsted, Conn., has been reelected for another year.

—Supt. Wells A. Hall of Concord, Mass., has been reappointed for another year. Supt. Hall has filled the superintendency for the past twenty years.

—Julius E. Warren of Gloversville, N. Y., has been elected superintendent of schools at Springfield, Mass.

—Supt. F. H. Warren of Fostoria, O., has been reelected for a three-year period, at a salary of $4,000.

—Mr. C. Ray Gates of Grand Island, Nebr., has been elected president of the Nebraska Schoolmasters' Club.

—Mr. C. H. Maxson has been elected superintendent of schools at Pipestone for the next year.

—Mr. John W. Rittinger, superintendent of schools of St. Joseph County, Ind., has been appointed state high school inspector. Mr. Rittinger has been county superintendent since his election in 1921 and his term expires in August. Mr. Rittinger has served on the committees of the state teachers' association and the Northern Indiana Teachers' Association, and has assisted the state department in the making of educational surveys and tests in several counties.

—At Shelbyville, Ind., funds have been collected for the purchase of a bronze tablet to be placed in the city library in memory of the late J. W. Holton, former superintendent of schools. Teachers and pupils in the schools contributed small amounts for the fund. The tablet will be placed in the lobby of the library and will bear the name of the late superintendent, the dates of his birth and death, and some outstanding features of his life.

—Mr. Emil Estenson of Velva, N. D., has been elected superintendent of schools at East Grand Forks, Minn., to succeed M. C. Hayes.

—Supt. H. C. Bell of Luverne, Minn., has been reelected for a fourteenth term.

—Supt. D. B. Hoffman has been reelected as head of the East Moline, Ill., graded schools.

—Supt. W. H. Lemmel of Caruthersville, Mo., has been reelected for another year.

—Mr. D. F. Dickerson of Atlantic, Ia., has been elected superintendent of schools at Lyons.

—Supt. H. J. Beckemeyer of Hillsboro, Ill., has been reelected for a sixth term.

—W. E. Phipps of Nashville, Tenn., has been elected superintendent of schools at North Little Rock, Ark.

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School Board Journal

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SWEEPING COMPOUNDS
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TABLETS
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TALKING MACHINES
Victor Talking Machine Co.

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National Association of Teacher Agencies
Teacher Agencies Directory

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National Paper Products Co.
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Underwood Typewriter Company

VACUUM CLEANING SYSTEMS
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VACUUM PUMPS
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Globe Ventilator Company
Knowles Mushroom Ventilator Co.
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Buckeye Blower Company
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Greenfield Tap & Die Corporation
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WARDROBES
K-M Supply Company
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National Vulcanized Fibre Company

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On Attending a Graduation

I sit far back in the darkness of the old Opera House, my eyes upon the stage
Where half a hundred boys and girls sit in tense silence
While the old Professor fumbles over the ribbon tied diplomas.
Flowers....the air is heavy with their perfume.

I thrill as across the stage there trips a graceful image
In long full skirt and high piled hair;
One after one—the half forgotten figures of another day—
I even see the one that once was I—and smile—
Till some small thing dispels the past,
And I am old and disillusioned with the world.

What's this that time has stolen from me?
Youth—Beauty? 'Twere foolishness to sigh o'er such as these,
But for one hour of youth's unshaken faith—
For dreams that pierce the sky and reach infinity—
I'd trade the years that can but rob me still.

Kate Haworth, in Chicago Tribune.

There Was Evidence

"Has your brother come home from college yet?"

"I guess so, or else the car's been stolen."
—Minnesota Ski-U-Mah.

Slightly Irregular

One of the questions put to a class of rural adults was: "In the sentence, 'The bird flew over the house', is 'flew' a regular or an irregular verb?" This proved a sticker for the class, but finally one man ventured an answer. Said he: "If the bird that flew over the house was a wild goose, it went in a straight, regular line, so the verb is regular; but if it was a woodpecker then it went in a crooked, zig-zag line, and so the verb is irregular."

All but the grammar-bound examiner were satisfied with this rational explanation.—Boston Transcript.

A Good Speaker

The class had just finished reading Webster's address at Plymouth. "Who was Webster?" asked the teacher. Various pupils replied: "A statesman." "An orator." To the next question: "What is a statesman?" one boy answered: "A man who goes around making speeches." This did not satisfy the teacher, who said "That is not quite correct. I am not a statesman, yet I go around making speeches." "Professor," called out the youth who had given the definition, "I mean a man who goes around making good speeches."

The Fatal Slip

On the whole, he was a decent little chap, but, as he had an unfortunate predilection for cricket, it is not astonishing that he should occasionally have played truant from school to indulge in his favorite sport. But, alas, he was always found out, and the consequences were always dire.

One day, however, he hit on a bright idea. Going to a telephone, he called up his teacher, and assuming a deep, mature voice, explained that his son would be unable to attend school that day.

"Thank you very much for the message," courteously replied the teacher. "Who is it speaking?"

The query somewhat staggered the small delinquent. "Er—this is my father speaking," he faltered lamely.—Tatler.

"What can you tell me about Esau?"
asked the pedagogue of his most promising pupil in the beginners' class.

"Esau," replied the young hopeful, with the glib alacrity of one who feels himself for once on safe ground, "Esau was the fellow what wrote a book of fables and sold its copyright for a mess of potash."—Chicago News.

Father and son were having, so father imagined, a heart-to-heart talk. Said father: "And what do you plan to be when you graduate from college?"

The son lighted a fresh cigarette and strolled to the window. "Do you know," said he, turning at length, "soon that will no longer be an academic question."—Chicago News.

BUYERS NEWS

TRADE PUBLICATIONS

Issue New Catalog. The National Renovating and Supply Company of Kansas City, Missouri, has just issued their Catalog No. 126, of Cleaning Products of standard quality. The pamphlet illustrates and describes school and janitor supplies, including cleaning agents for every purpose, polish of all kinds, twisted wire brushes and mops, disinfectants, deodorants, insecticides, liquid soaps, and finishing materials. In the complete line of National Products there is a product for every cleaning purpose, the result of years of investigation and tests. The catalog includes a price list in small as well as large quantities. Copies of the catalog will be sent on request to school authorities.

Flat Roof Specifications. This is volume one of a new series of reference booklets which the Barrett Company, 40 Rector St., New York, is issuing for the use of architects, engineers, and building superintendents. The book is authoritative in its recommendations for fifteen styles of flat roofs ranging from boards to concrete, tile, and gypsum. Each specification is accompanied by a detailed blue print which illustrates the roof. Of especial interest to school authorities, who are using roofs for play purposes, is a special specification for a roof covered with promenade tile suitable for playground use.

It is interesting to note that the specifications are based on nearly 75 years of experience and practice in the roofing field, and that they constitute the types of roofs which have given the best results under widely varying conditions.

The booklet will be sent to building authorities or school authorities on request.

Issue New Catalog. The Angle Steel Stool Company of Plainwell, Michigan, has just issued a very interesting and complete catalog of steel equipment for factory, office and school use. Every piece of furniture and equipment produced is built of OT-STEEL, and the prices are astonishingly reasonable, in view of the quality, utility and attractive appearance. This catalog describes and illustrates the complete line of Angle Steel products, including stools, chairs, trucks, tables, bench seats, boxes, cabinets, printers' galley racks, lathe pans, typewriter and radio stands, etc. This valuable catalog, together with the latest price list, will be sent on request.

Economy School Furniture Company Change. The Economy Drawing Table and Manufacturing Company has recently changed its corporate title to the Economy School Furniture Company. The change involves an important departure in the manufacturing and sales policy of the firm, but denotes no change in the ownership, management, or general conduct of the business.

The Economy Drawing Table and Manufacturing Company has for many years made a general line of drawing tables, filing cabinets, and other furniture for drafting rooms and artists' studios. It has also made a large line of school drawing room tables. This latter branch of the firm's business has been developed so rapidly, that it has practically crowded out the older general drafting room business. The firm has accordingly decided to specialize entirely in school furniture, and is now making one of the largest lines of high grade school drawing room furniture and cabinets manufactured in the United States.

New catalogs have been prepared and are available for school authorities.

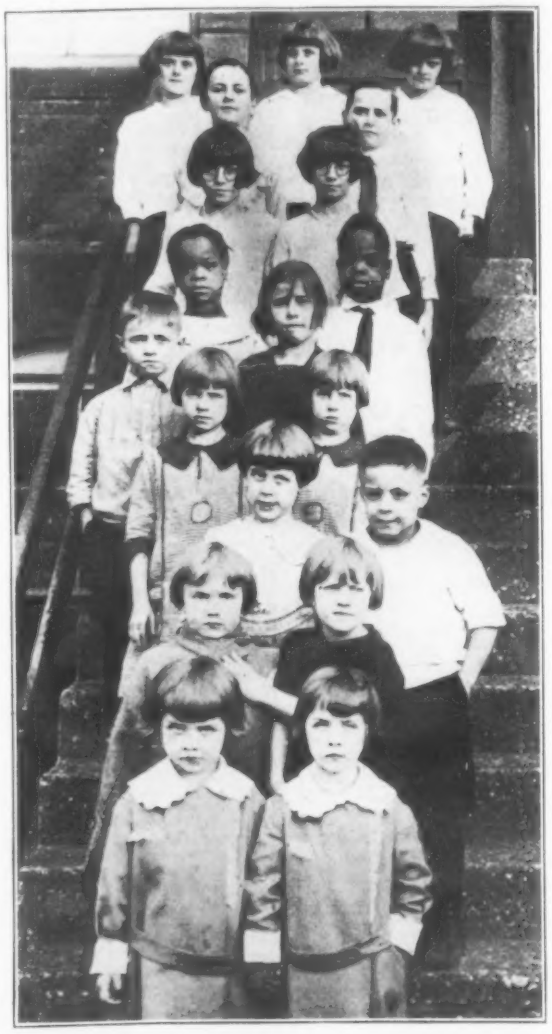
Conservation of Eyesight. The Athey Co., of Chicago, Ill., has issued a small, sixteen-page booklet, on the conservation of eyesight, giving the cause of impaired vision, the result and the remedy. It is pointed out that the proper diffusion of daylight from the windows is the all-important factor in the schools, and attention is called to the Athey Perennial Window Shade, which is an entirely satisfactory device whereby any desired part of the window can be covered.

Again, the matter of ventilation is of great importance. Where forced draft ventilation is not employed in the construction, the Athey shade automatically performs this function. When the sun is on the window, lower the shade to within ten inches of the window stool, thus getting a translucent light, lower the window ten inches from the top, and the sun on the glass will superheat the space between the glass and the shade. When the heat in the room becomes higher than the outside atmosphere, the circulation moves upward from the room, permitting automatic ventilation in use of a fixed law of gravity.

The Athey shade is made of a fine herringbone weave coutil cloth, 188 threads to the square inch. The cord case is a steel channel, enameled, with brass rollers, and the folds are perforated for the strained brass wire and operating cords. The right hand cord raises the shade from the bottom and the left one lowers it from the top, thus giving perfect control of ventilation and light diffusion. The shade construction eliminates the necessity of handling and wears indefinitely.

The firm is prepared to furnish a list of cities where the Athey shade has been installed in the last two years.

Another line which the firm manufactures, is the Athey cloth lined metal weather strip, a weather strip which may be applied to either wood or metal sash. It has been designed to make a window air and dust tight, without making the windows hard to open and close.



SCHOOL HAS EIGHT SETS OF TWINS AND SOME TRIPLETS.

Cleveland.—Following the publication of a photo of five pairs of twins attending a Baltimore, Md., school, something was started. From the Washington Irving school here, came the protest of Principal Jennie Horton, "That isn't anything. We have eight pairs of twins and one set of triplets," and the above picture shows the children which helped this school claim its record. (International News Reel, Photo.)

NEW TRADE PRODUCTS

New Swinging Blackboard. Blackboard space for the teacher is always at a premium, especially in the classrooms where the teachers seek to prepare work in advance. The problem is completely solved by the new Thrasher swinging blackboard, which has just been placed on the market by the K-M Supply Co., of Kansas City, Mo.

The Thrasher blackboard is 42 inches wide and 36 inches high, and is intended to be hung 40 inches above the floor line. When the four boards are swung back, they stand out from the wall only four inches, and the height is correct for pupils to see without difficulty, what is written. They may be swung around to any angle and will clear the teacher's desk and chair with plenty of room to spare.

Through the use of the blackboard, the teacher has fourteen square feet of writing surface conveniently located. The boards may be set at any necessary angle so as to be easily shown to the pupils in any section of the class. The frame may be had with either a genuine Bangor slate blackboard, or with a high-grade composition blackboard.

Complete circular matter is available.